Acer M3 581T/581TG

SERVICEGUIDE



Revision History

Refer to the table below for the updates made to this M3 581T/581TG service guide.

Date	Chapter	Updates
2012/2/29	Chapter 3	Update "Removing the LCD Bezel"

Service guide files and updates are available on the ACER/CSD Website. For more information, go to http://csd.acer.com.tw.

Disclaimer

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Conventions

The following conventions are used in this manual:

⚠ **WARNING:**

Indicates a potential for personal injury.

⚠ **CAUTION:**

Indicates a potential loss of data or damage to equipment.

+ **IMPORTANT:**

Indicates information that is important to know for the proper completion of a procedure, choice of an option, or completing a task.

The following typographical conventions are used in this document:

- Book titles, directory names, file names, path names, and program/process names are shown in *italics*.

  Example:

  the *DRS5 User's Guide*

/usr/local/bin/fd

the */TPH15spool_M* program

- Computer output (text that represents information displayed on a computer screen, such as menus, prompts, responses to input, and error messages) are shown in constant width.

Example:

```
[01] The server has been stopped
```

- User input (text that represents information entered by a computer user, such as command names, option letters, and words) are shown in constant width bold.

Variables contained within user input are shown in angle brackets (< >).

Example:

At the prompt, type run **`<file name> -m`**

- Keyboard keys are shown in ***bold italics***.

Example:

After entering the data, press ***Enter***.

General information

Before using this information and the product it supports, read the following general information.

This service guide provides you with all technical information relating to the basic configuration for Acer's global product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (such as add-on cards, modems, or extra memory capabilities). These localized features are not covered in this generic service guide. In such cases, contact your regional offices or the responsible personnel/channel to provide you with further technical details.

When ordering FRU parts: Check the most up-to-date information available on your regional Web or channel. If, for whatever reason, a part number change is made, it may not be noted in this printed service guide.

Acer-authorized Service Providers: Your Acer office may have a different part number code than those given in the FRU list in this service guide. You must use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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Hardware Specifications

CHAPTER 2
System Utilities

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CHAPTER 4
Troubleshooting

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CHAPTER 1

Hardware Specifications

Hardware Specifications and Configurations

Features

The following is a brief summary of the computer's many features:

Operating System

- Genuine Windows® 7 Home Premium 64-bit

Platform

- Intel® Core™ i7-2637M processor (4 MB L3 cache, 1.70 GHz.17W), i5-2467M processor (3 MB L3 cache, 1.60 GHz, 17W), i3-2367M processor (3 MB L3 cache, 1.40 GHz, 17W), supporting Intel® 64 architecture, Intel® Smart Cache
- Mobile Intel® HM77 Express Chipset

System Memory

- Dual-channel DDR3 SDRAM support:
  - Up to 6 GB of DDR3 system memory, 2 GB on board and 1 memory slot

Display

- 15.6" HD 1366 x 768 resolution, high-brightness (200-nit) LED-backlit Glare TFT LCD
- Mercury-free, environment-friendly
- LED-backlight with driving circuit design
- 16:9 aspect ratio

Graphics

NVIDIA Optimus™ GeForce GT640M with dedicated DDR3 VRAM, supporting CUDA®, PhysX®, 3D Vision®, Microsoft® DirectX® 11, OpenGL® 4.1, OpenCL™ 1.1

- Dual independent display support
- 16.7 million colors
- External resolution / refresh rates:
  - HDMI® port up to 1920 x 1080: 60 Hz
- MPEG-2/DVD decoding
- VC-1 and H.264 (AVC) decoding
- Microsoft® DirectX® Video Acceleration (DXVA) application interface (API)
- HDMI® (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

Intel® integrated GPU

Storage Subsystem

Solid state drive

- mSATA Type, LF+HF
- Multi-Level Cell (MLC) NAND flash
- 128 GB/256 GB

Hard disk drive

- SATA Type, 5400 RPM, 2.5 ", Slim with height of 7.0 mm
- 320/500 GB

2-in-1 card reader, supporting:

- Secure Digital™ (SD), Secure Digital™ eXtended Capacity(SDXC), MultiMediaCard™ (MMC), MultiMediaCard Plus (MMCplus™)

Audio Subsystem

- Optimized Dolby® Home Theater® v4 audio enhancement, featuring Audio Optimizer, Audio Regulator, Volume Leveler, Volume Maximizer, Intelligent EQ, Dialogue Enhancer, Surround Virtualizer for Headphones, Surround Virtualizer for Built-in Speakers, and Dolby® Digital Output technologies
- Two built-in 20mm diameter stereo speakers and the Acer Tuba CineBass booster supporting low-frequency effects
- True-5.1-channel surround sound output
- High-definition audio support
- MS-Sound compatible
- Built-in single digital microphone

Optical Media Drive

- Slim DVD Super Multi double-layer drive:
  - Read: 24X CD-ROM, 24X CD-R, 24X CD-RW, 8X DVD-ROM, 8X DVD-R, 8X DVD+R, 8X DVD-ROM DL, 8X DVD-R DL, 8X DVD+R DL, 8X DVD-RW, 8X DVD+RW, 5X DVD-RAM
  - Write: 24X CD-R, 10X CD-RW, 8X DVD-R, 8X DVD+R, 6X DVD-RW, 8X DVD+RW, 5X DVD-RAM, 4X DVD+R DL, 4X DVD-R DL

Communication

Webcam

- Acer Video Conference, featuring:
  - 1.3M webcam with 1280*1024 effective resolution
  - Acer Video Conference Manager software, featuring Video Quality Enhancement (VQE) technology, supporting 720p resolution online video calls

Wireless and networking

- WLAN:
  - Acer InviLink™ Nplify™ 802.11b/g/n Wi-Fi CERTIFIED™
  - Supporting Acer SignalUp™ wireless technology
- WPAN:
  - Bluetooth® 4.0 + HS
- LAN:
  - PCI-E Gigabit Ethernet

Privacy Control

- Trusted Platform Module(TPM) 1.2 (For future SKU)
- Intel Anti-Theft Technology
- BIOS user, supervisor password
- Kensington lock slot

Dimensions and Weight

Dimensions

- 376.4 (W) x 253.0 (D) x 19.7/20.7 (H) mm (14.81 x 10.0 x 0.77/0.82 inches)

Weight

- 2.25 kg with HDD

Power Adapter and Battery

ACPI 3.0 CPU power management standard: supports Standby and Hibernation power-saving modes

Power adapter

- 3-pin 65 W AC adapter:
  - 95.0 (W) x 50.0 (D) x 25.4 (H) mm (3.74 x 1.97 x 1.00 inches)
  - 216 g with 180 cm power cord

Battery

- 4850 mAh 3-cell Li-ion standard battery pack
- Battery life: 8 hours
- ENERGY STAR®

Special Keys and Controls

Keyboard

- 103-US/104-UK/107-JP keys-layout keyboard with independent standard numeric keypad, international language support

Touchpad

- Button-less design
- Dual-mode touchpad with Media Console / multi-gesture function, supporting two-finger scroll, pinch, rotate, flip

Media keys

- Media controls: play/pause, stop, previous, next
- Volume controls: up/down

I/O Ports

- Multi-in-1 card reader (SD™, SDXC™, MMC, MMCplus™)
- Two USB 2.0 ports
- One USB 3.0 port
- HDMI® port with HDCP support
- Headphone/speaker jack
- Ethernet (RJ-45) port
- DC-in jack for AC adapter

Software

Productivity

- Acer AUPEO
- Acer Backup Manager
- Acer ePower Management
- Acer eRecovery Management
- Acer Evernote
- Acer ExpressCache
- Acer Identity Card
- Acer KOBO
- Acer Netflix Shortcut
- Acer newsXpresso
- Acer NOOK for PC
- Acer Registration
- Acer Sleep Memory Optimizer
- Acer Smart Timer
- Acer Updater

- Acer USB Charge Manager
- Acer Welcome Center
- Adobe Flash Player
- Adobe Reader X
- Office 2010 Acer edition

Security

- McAfee Family Protection Shortcut
- McAfee Internet Security Suite
- McAfee Virus Definitions
- MyWinLocker Suite
- Norton Online Backup

Multimedia

- Acer Crystal Eye Webcam
- Acer clear.fi Media
- Acer clear.fi Photo
- Cyberlink MediaEspresso
- NTI Media Maker

Gaming

- Acer Fooz Kids
- Wild Tangent WW Acer Edition

Communication and ISP

- Acer VCM
- Skype
- Windows Live Essentials 2011

Web links and utilities

- Acer Accessory Store
- Bing Bar
- Bing Setup
- eBay Shortcut
- Internet Explorer 9
- Silverlight

Environment

- Temperature:
  - Operating: 5 °C to 35 °C
  - Non-operating: -20 °C to 65 °C

- Humidity (non-condensing):
  - Operating: 20% to 80%
  - Non-operating: 20% to 80%

Notebook Tour

This section provides an overview of the features and functions of the notebook.

Open Top View



Figure 1-1. Open Top View

Table 1-1. Open Top View

No	Icon	Item	Description
1		Microphone	Internal microphone for recording sound.
2		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output.
3		Keyboard	For entering data into computer.
4		Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
5		Click button area (left and right)	The left and right button function like the left and right mouse buttons.
6		Webcam	Web camera for video communication.

Closed Front View

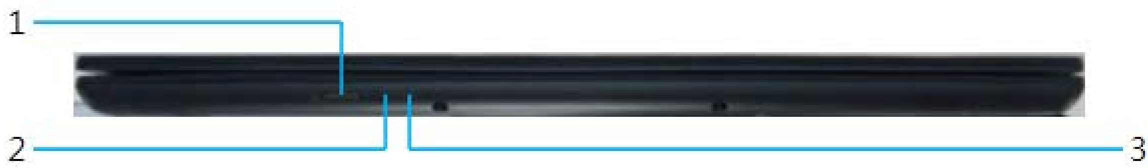


Figure 1-2. Closed Front View

Table 1-2. Closed Front View

No	Icon	Item	Description
1		Power button	Turns the computer on and off.
2		Power indicator	Indicates the computer's power status.
3		Battery indicator	Indicates the computer's battery status.

Closed Rear View



Figure 1-3. Closed Rear View

Table 1-3. Closed Rear View

No	Icon	Item	Description
1		Ventilation slots	Enable the computer to stay cool, even after prolonged use.

Table 1-3.   Closed Rear View

No	Icon	Item	Description
2		Headphones/ speaker/line-out jack with S/PDIF support	Connects to audio line-out devices (e.g., speakers, headphones).
3		USB 2.0 port	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
4		USB 3.0 port	Connects to USB devices. Supports the USB 3.0 (SuperSpeed USB) specification.
5	HDMI	HDMI port	Supports high definition digital video connections.
6		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000-based network.
7		DC-in jack	Connects to an AC adapter.

Left View



Figure 1-4.   Left View

Table 1-4.   Left View

No	Icon	Item	Description
1		Optical drive	Internal optical drive; accepts CDs DVDs.
2		Optical disk access indicator	Lights up when the optical drive is active.
3		Optical drive eject button	Ejects the optical disk from the drive.

Table 1-4. Left View

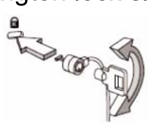
No	Icon	Item	Description
4		Emergency eject hole	Ejects the optical drive tray when the computer is turned off. **NOTE:** Insert a paper clip to the emergency eject hole to eject the optical drive tray when the computer is off.
5		Multi-in-1 card reader	Accepts Secure Digital (SD 3.0), MultiMediaCard (MMC). **NOTE:** Push to remove/install the card. Only one card can operate at any given time.

Right View



Figure 1-5. Right View

Table 1-5. Right View

No	Icon	Item	Description
1		Kensington lock slot 	Connects to a Kensington-compatible computer security lock. Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.

Base View



Figure 1-6. Base View

Table 1-6. Base View

No	Icon	Item	Description
1		Main door	Houses the computer’s HDD, Memory bar, SSD card and WLAN card.
2		Speakers	Deliver stereo audio output.

Indicators

The computer has two easy-to-read status indicators. The following indicators are visible even when the computer cover is closed.

Table 1-7. Indicators

Icon	Function	Description
	Power indicator	Indicates the computer's power status.
	Battery indicator	Indicates the computer's battery status.

Touchpad Basics

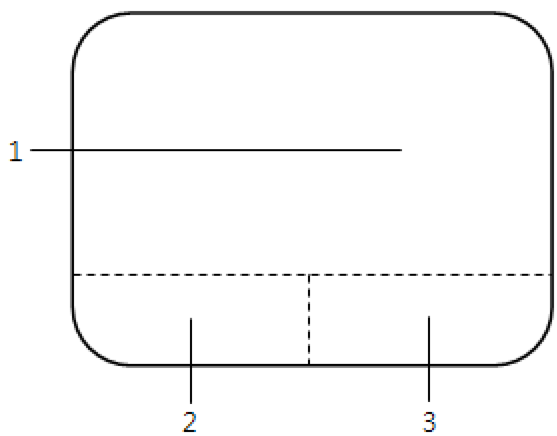


Figure 1-7. Touchpad

- Move finger across the TouchPad (1) to move the cursor.
- Press the left (2) and right (3) buttons located beneath the TouchPad to perform selection and execution functions. These two virtual buttons are the equivalent of the left and right buttons on a mouse. Tapping on the TouchPad is the same as clicking the left button.

Table 1-8. Touchpad

Function	Left Button (2)	Right Button (3)	Main Touchpad (1)
Execute	Quickly click twice.		Rapidly tap twice.

Table 1-8. Touchpad

Function	Left Button (2)	Right Button (3)	Main Touchpad (1)
Select	Click once.		Tap once.
Access context menu		Click once.	

Using the Keyboard

The keyboard contains an embedded numeric keypad, a separate cursor, windows key, lock function keys, special and full sized keys.



Figure 1-8. Keyboard Lock Keys

Lock Keys

The keyboard has three lock keys which the user can toggle on and off.

Table 1-9. Lock Keys

Lock key	Description
Caps Lock	When on, all alphabetic characters are in uppercase.
Num Lock	Off by default. When On, internal keyboard acts as numeric key padlock. If an external keyboard or keypad is present, the Num Lock will have the following definitions: • When On, the system boots with external keyboard/keypad Num Lock status On. Internal keyboard overlay numeric keys are disabled. • The key can be turned on/off via the internal keyboard (Fn+F11) or the external keyboard/keypad. Num Lock affects the external keyboard/keypad only. • Shift state is NOT used for the cursor movement by the numeric keys. • The state of the Num Lock is not changed by the attachment/removal (hot plug) of the external keyboard/keypad.
Scroll Lock <Fn> +<F12>	When On, the screen moves one line up or down when pressing up or down arrow keys. Scroll Lock is not applicable for all applications.

Windows Keys

The keyboard has two keys that perform Windows-specific functions.

- Windows Logo key
- Application key

Table 1-10. Windows Keys

Key	Description
Windows Logo key	Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu. It can also be used with other keys to provide a variety of functions. **Functions supported by Windows XP, Windows Vista, and Windows 7:** <>: Open or close the Start menu <> + <R>: Open the Run dialog box <> + <M>: Minimizes all windows <SHIFT> + <> + M: Undo minimize all windows <> + <F1>: Show the help window <> + <E>: Open Windows Explorer <> + <F>: Search for a file or folder <> + <D>: Show the desktop <CTRL> + <> + <F>: Search for computers (search in network) <> + <L>: Lock computer (if connected to a network domain), or switch users (if not connected to a network domain) <CTRL> + <> + <TAB>: Moves focus from Start menu, to the Quick Launch toolbar, to the system tray (use RIGHT ARROW or LEFT ARROW to move focus to items on the Quick Launch toolbar and the system tray) <> + <TAB>: Cycle through programs on the taskbar <> + <BREAK>: Display the System Properties dialog box **Functions supported by Windows XP:** <> + <BREAK>: Show the System Properties dialog box <> + <U>: Open Ease of Access Center
Application key	This key has the same effect as clicking the right mouse button; opening the application's context menu.

Hotkeys

The computer uses hotkeys or key combinations to access most computer controls.

To activate hotkeys, press and hold the ***<Fn>*** key before pressing the key in the combination.



Figure 1-9. Keyboard Hotkeys

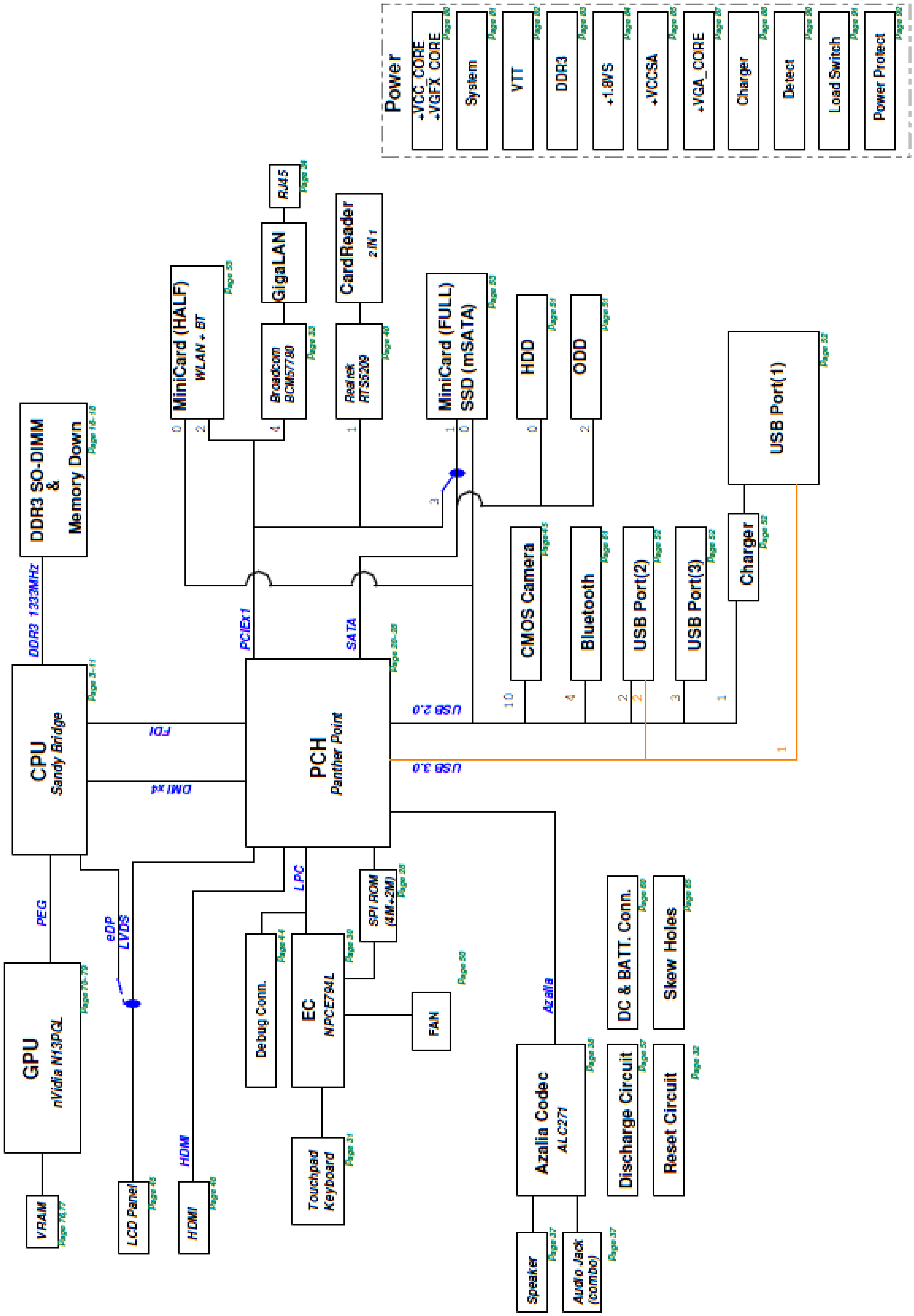
Table 1-11. Hotkeys

Hotkey	Icon	Function	Description
<Fn> + <F3>		Communication Device On/Off	Toggles WiFi, 3G and Bluetooth On and Off using a pop-up window.
<Fn> + <F4>		Sleep	Puts the computer in Sleep mode.
<Fn> + <F5>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<Fn> + <F6>		Display off	Turns Off the LCD back light
<Fn> + <F7>		Touchpad toggle	Turns the touchpad On and Off.
<Fn> + <F8>		Speaker toggle	Turns the speakers On and Off.
<Fn> + <▷>		Brightness Up	Increases the screen brightness.
<Fn> + <◁>		Brightness Down	Decreases the screen brightness.
<Fn> +<Home>		Play/Pause	Play or pause a selected media file.
<Fn> + <Pg Up>		Stop	Stop playing the selected media file.
<Fn> +<Pg Dn>		Previous	Return to the previous media
<Fn> + <End>		Next	Jump to the next media file.

Table 1-11. Hotkeys (Continued)

Hotkey	Icon	Function	Description
Alt> + <F10>		D2D recovery	Enters to the D2D recovery during POST

System Block Diagram



Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	376.4 mm	14.81 in
Width	253.0 mm	10.0 in
Height (front/rear)	19.7/20.7 mm	0.77/0.82 in
Weight (equipped with optical drive, flash drive, and battery)	2.25 kg with HDD	4.5 lbs with HDD
Input power		
Operating voltage	19V at 3.42A Max for 65W	
Operating current	3.42A(Max)	
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	
Nonoperating	200 g, 2 ms, half-sine	
Random vibration		
Operating	0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	
Nonoperating	1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	

NOTE:
Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates within this range of temperatures.

System Board Major Chips

Item	Specification
Core logic	Intel Panther Point HM77
VGA	NVIDIA Optimus™ GeForce GT640M
LAN	BCM57780
USB 3.0	RT9712AGS
Embedded controller	NUVOTON NPCE795L
Bluetooth	Atheros AR3012, Broadcom BCM20702
Wireless	BCM943227HM4L
TPM	NUVOTON NPCT420R(For future SKU)
PCMCIA	N/A
Audio codec	Realtek ALC271X
Card reader	Realtek RTS5209

Processor

Item	Specification
Central Processing Unit (CPU) type	Intel® Sandy Bridge Core i7/i5/i3 Processor
CPU package	FC-BGA 1023
Core Logic	Multi execution cores· ● A 32-KB instruction and 32-KB data first-level cache (L1) for each core ● A 256-KB shared instruction/data second-level cache (L2) for each core ● Up to 4-MB shared instruction/data third-level cache (L3), shared among all cores
Chipset	Mobile Intel® HM77

Processor Specifications

Item	CPU Speed (GHz)	Cores	Mfg Tech	Cache Size	Package
i7-2637M	1.7	4	32 nm	4 MB	BGA 1023
i5-2467M	1.6	2	32 nm	3 MB	BGA 1023
i3-2367M	1.4	2	32 nm	3 MB	BGA 1023

CPU Fan True Value Table

CPU Temperature	Fan Speed (RPM)	SPL Spec (dBA)
50	2600	28
58	3000	31
66	3300	34
74	3700	37
85	4000	40
Throttling 50%: On= 95 °C; OFF=80 °C		
OS shut down at 100C; H/W shut down at 92 °C		

System Memory

Item	Specification
Memory controller	Built in CPU
Memory size	2GB DDR3 RAM on-board+one DDR3 DIMM socket
DIMM socket number	1
Supports memory size per socket	2/4GB
Supports maximum memory size	6GB
Supports DIMM type	Support DDR III 1333/1600MHz SDRAM memory interface design
Supports DIMM Speed	1333/1600MHz
Support DIMM voltage	1.5V
Supports DIMM package	204P

Memory Combinations

On-board (MB)	Slot (MB)	Total Memory (MB)
2048	0	2048
2048	2048	4096
2048	4096	6144

Graphics Controller

Item	Specification
VGA Chip	NVIDIA Optimus™ Geforce GT640M
Supports	CUDA®, PhysX®, 3D Vision®, Microsoft® DirectX® 11, OpenGL® 4.1, OpenCL™ 1.1

Video Interface

Item	Specification
Chipset	NVIDIA Optimus™ Geforce GT640M
Package	29mmx29mm
Interface	LVDS
Compatibility	32bpp
Sampling rate	60Hz

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Type	UEFI
BIOS ROM type	W25Q32BV, W25Q16CV
BIOS ROM size	4MB
BIOS Features	• Winbond code base • Flash ROM 4 MB • Support Acer UI • Support multi-boot • Suspend to RAM (S3)/Disk (S4) • Various hotkeys for system control • Support SMBIOS 2.3 ,PCI2.2. • DMI utility for BIOS serial number configurable/asset tag-Support PXE • Support WinFlash • Wake on LAN from S3 • Wake on LAN from S5 in AC mode • System information • Refer to Acer BIOS specification.

LAN Interface

Item	Specification
LAN Chipset	BROADCOM BCM57780
LAN connector type	RJ45

Item	Specification
LAN connector location	RJ45 at the rear side
Features	Supports 10/100/1000Mbps

Keyboard

Item	Specification
Type	AF7S keyboard
Total number of keypads	103-US/104-UK/107-JP keys
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	• Phantom key auto detect • Overlay numeric keypad • Support independent pgdn/pgup/home/end keys • Support reverse T cursor keys • Factory configurable different languages by OEM customer

Hard Disk Drive (AVL components)

Item	Specification		
Vendor & Model Name	HITACHI HTS545050A7E380	HITACHI HTS543232A7A384	SEAGATE ST320LT020
Capacity (GB)	500	320	320
Bytes per sector	4096	512	4096
Data heads	2	2	2
Drive Format			
Height(mm)	7.0	7.0	7.0
Disks	1	1	1
Performance Specifications			
Spindle speed (RPM)	5400	5400	5400
Buffer size	8MB	8MB	8MB
Interface	SATA	SATA	SATA
Fast data transfer rate (Gbits/s, max)	3.0	3.0	3.0
DC Power Requirement			
Voltage tolerance	5V +/- 5%	5V +/- 5%	5V +/- 5%

Solid State Drive (AVL components)

Item	Specifications	
Vendor & Model Name	LITEON LMT-128M3M	LITEON LMT-256M3M
Capacity (GB)	128	256
Flash mode	MLC	MLC
Performance		
Sequential Read (MB/s)	470	460
Sequential Write (MB/s)	180	360
Interface	mSATA	mSATA
Max. fast data transfer rate (Gbits/s)	6.0	6.0
Operating Shock	1,500G/1.0ms	1,500G/1.0ms
DC Power Requirement		
Voltage tolerance	3.3V +/- 5%	3.3V +/- 5%

Super-Multi Drive Interface

Item	Specification	
Vendor & Model name	HITACHI-LG Slim DVD Super Multi Drive GU61N	
Performance Specification	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: 3600(24x)Max	Sustained: 11080(8x)Max
Buffer Memory	1MB	
Interface	SATA	

Item	Specification
Applicable disc format	Applicable disc format CD: CD-DA, CD-ROM, CD-ROM XA, Photo CD (multi-session), Video CD, Cd-Extra (CD+), CD-text DVD: DVD-VIDEO, DVD-ROM, DVD-R (3.9GB, 4.7GB) DVD-R DL, DVD-RW, DVD-RAM, DVD+R, DVD+R DL, DVD+RW CD: CD-DA (Red Book) - Standard Audio CD & CD-TEXT CD-ROM (Yellow Book Mode1 & 2) - Standard Data CD-ROM XA (Mode2 Form1 & 2) - Photo CD, Multi-Session CD-I (Green Book, Mode2 Form1 & 2, Ready, Bridge) CD-Extra/ CD-Plus (Blue Book) - Audio & Text/Video Video-CD (White Book) - MPEG1 Video CD-R (Orange Book Part) CD-RW & HSRW (Orange Book Part Volume1 & Volume 2 Super Audio CD (SACD) Hybrid type US & US+ RW DVD: DVD-ROM (Book 1.02), DVD-Dual DVD-Video (Book 1.1) DVD-R (Book 1.0, 3.9G) DVD-R (Book 2.0, 4.7G) - General & Authoring DVD+R (Version 1.0) DVD+RW DVD-RW (Non CPRM & CPRM) DVD+/-R Dual
Loading mechanism	Load: Manual Release: (a) Electrical Release (Release Button) (b) Release by ATAPI command (c) Emergency Release
Power Requirement	
Input Voltage	5 V +/- 5% (Operating)

LED 15.6”

Item	Specification
Vendor/model name	AUO 15.6”HD 16:9 Color TFT-LCD/ B156XTN03.0
Screen Diagonal (mm)	394.9(15.55in)
Active Area (mm)	344.2 X 193.5
Display resolution (pixels)	1366x3(RGB)x768
Pixel Pitch (mm)	0.252x0.252
Typical White Luminance (cd/m2) also called Brightness	200 typ.170 min
Contrast Ratio	500 typ.
Response Time (Optical Rise Time/Fall Time) msec	8 typ. / 16 Max
Typical Power Consumption (watt)	3.4 max
Weight (without inverter)	400g max
Physical Size (mm)	360 x 224.3 x 3.4 max
Electrical Interface	1 channel LVDS

Item	Specification
Viewing Angle (degree)Horizontal (Right) CR = 10 (Left)Vertical (Upper) CR = 10 (Lower)	45 (Right) / 45 (Left) / 15 (Upper) / 35 (Lower)

Display Supported Resolution (LCD Supported Resolution)

Resolution	16 bits	32 bits	Intel	NVIDIA
800x600p/60Hz 16:9	Y	Y	Y	Y
1024x768p/60Hz 16:9	Y	Y	Y	Y
1280x600/60Hz 16:9	Y	Y	Y	Y
1280x720/60Hz 16:9	Y	Y	Y	Y
1280x768/60Hz 16:9	Y	Y	Y	Y
1360x768/60Hz 16:9	Y	Y	Y	Y
1366x768/60Hz 16:9	Y	Y	Y	Y

Graphics Controller

Item	Specification
VGA Chip	NVIDIA Optimus™ GeForce GT640M with dedicated DDR3 VRAM
Supports	CUDA®, PhysX®, 3D Vision®, Microsoft® DirectX® 11, OpenGL® 4.1, OpenCL™ 1.1

Display Supported Resolution (GPU Supported Resolution)

Resolution	16 bits	32 bits	Intel	NVIDIA
800x600p/60Hz 16:9	Y	Y	Y	Y
1024x768p/60Hz 16:9	Y	Y	Y	Y
1280x600/60Hz 16:9	Y	Y	Y	Y
1280x720/60Hz 16:9	Y	Y	Y	Y
1280x768/60Hz 16:9	Y	Y	Y	Y
1360x768/60Hz 16:9	Y	Y	Y	Y
1366x768/60Hz 16:9	Y	Y	Y	Y

Display Supported Resolution (LCD panel Supported Resolution)

Resolution	16 bits	32 bits	Intel	NVIDIA
800x600p/60Hz 16:9	Y	Y	Y	Y
1024x768p/60Hz 16:9	Y	Y	Y	Y
1280x600/60Hz 16:9	Y	Y	Y	Y

Resolution	16 bits	32 bits	Intel	NVIDIA
1280x720/60Hz 16:9	Y	Y	Y	Y
1280x768/60Hz 16:9	Y	Y	Y	Y
1360x768/60Hz 16:9	Y	Y	Y	Y
1366x768/60Hz 16:9	Y	Y	Y	Y

Bluetooth Interface

Item	Specification
Chipset	Atheros AR3012, Broadcom BCM20702
Data throughput	• TX 1.2Mbits/sec • RX 1.2Mbits/sec
Protocol	4.0+HS
Interface	USB 2.0
Connector type	• SM08B-SURS-TF/JST • SM06B-XSRK-ETB/SM08B-SURS-TF
Supported protocol	A2DP

Bluetooth Module

Item	Specifications
Controller	Atheros AR3012, Broadcom BCM20702
Features	• Mini USB module with built-in antenna • Bluetooth 4.0

Camera

Item	Specification
Vendor and Model	PRIMAX 50-70511ARC8
Type	1.3M

WIFI Card

Item	Specification	
Vendor and Model	FOXCONN T77H167	LITEON WN6603AH
Wireless LAN Standards	802.11b/g/n	
Operating Frequency	2.4 GHz	
Form Factor	Half-Mini card	
Host Interface	PCI-Express Bus interface	
PCB	4-layer design and single side	
Antenna connector	2UFL type	

Audio Codec and Amplifier

Item	Specification
Audio Controller	Realtek ALC271X

Item	Specification
Features	● Meets Microsoft WLP (Windows Logo Program) audio requirements ● High performance DACs with digital >110dB and analog 98dB (A-weighting) signal-to-noise ● High performance ADCs with digital > 100dB and analog 90dB (A-Weighting) signal-to-noise ratio ● Six DAC channels support 16/20/24-bit PCM format for 5.1 sound playback ● Two stereo ADCs support 16/20/24-bit PCM format, multiple stereo recording ● All DACs supports 44.1k/48k/96k/192kHz sample rate ● Primary 16/20/24-bit SPDIF-OUT supports 32k/44.1k/48k/88.2k/96k/192kHz sample rate ● Secondary 16/20/24-bit SPDIF-OUT supports 32k/44.1k/48k/88.2k/96k/192kHz sample rate ● Analog jacks (port-A, B, C, E and G) support stereo input and output re-tasking ● Support MONO output at port-H ● Port-A/D/E/F built in headphone amplifiers ● Port-E and Port-F headphone amplifiers can drive earphone directly without DC blocking capacitor ● Port-B/C/E/F with software selectable boost gain (+10/+20/+30dB) for analog microphone input ● Supports external PCBEEP input and built-in digital BEEP generator ● Software selectable 2.5V/3.2V VREFOUT ● Supports legacy analog mixer architecture ● Four channels of digital microphone array input for voice applications ● Two jack detection pins each designed to detect up to 4 jacks plugging ● 1.0dB/step playback volume control ● 1.5dB/step recording volume control ● High pass filter to cancel DC offset from AD converter ● Jack detection function is supported when device is in power down mode (D3) ● 2 GPIOs (General Purpose Input and Output) for customized applications. GPIO0 and GPIO1 share pin with digital microphone ● Supports anti-pop mode when analog power AVDD is on and digital power is off ● Intel low power ECR compliant and power status control for every analog converter and pin widgets ● Supports 3.3V digital core power, 1.5V~ 3.3V scalable digital I/O power for HD Audio link, and ● 3.0~5.0V analog power ● 48-pin LQFP 'Green' package

Item	Specification
Amplifier	Embedded
Features	● 4 step gain control ● 2-W/Ch Output Power into 3-W load from 5-V supply ● Fully Differential Input ● Low Supply Current and Shutdown selection ● Embedded de-pop circuit

Audio Interface

Item	Specification
Audio Controller	Realtek ALC271X
Audio onboard or optional	On board
Mono or Stereo	Stereo
Resolution	Support 16/20/24bit PCM
Compatibility	HD audio Interface;
Sampling rate	Sample rate up to 192Khz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker/quantity	Yes/(2W speaker x1)

Battery

Item	Specifications
Vendor & Model name	SANYO UPF656790
Battery Type	Lithium polymer
Pack capacity	4850 mAh
Number of battery cell	3
Package configuration	3S1P

VRAM

Item	Specification
Chipset	HYNIX H5TQ1G63DFR-11C
Memory size	1GB
Interface	DDR3

USB Port

Item	Specification
USB compliance level	USB3.0, USB2.0

Item	Specification
EHCI	2
Number of USB port(s)	USB3.0x1, USB2.0x2
Location	USB3.0 at the rear side USB2.0 two at the rear side
Output Current	1.0A for each connector

HDMI Port

Item	Specification
Compliance level	HDMI1.3c
Data thoroughput	Up to 16.7 million colors
Number of HDMI port(s)	1
Location	HDMI at the rear side

AC Adapter

Item	Specification
Input rating	100-240V AC
Maximum input AC current	1.5A Max at 100V AC
Inrush current	No damage; meet fuse and bridge diode.
Efficiency	84% min. at nominal input voltage.

System Power Management

Item	Specification
Mech. Off (G3)	All devices in the system are turned off completely.
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices like CPU and hard disc can be power managed.
Suspend to RAM (S3)	CPU set power down, VGA Suspend, PCMCIA SuspendAudio, Power Down, Hard Disk Power Down, CD-ROM Power Down, Super I/O Low Power mode.
Save to Disk (S4)	Also called Hibernation Mode. System saves all system states and data onto the disc prior to power off the whole system.

Card Reader

Item	Specification
Chipset	REALTEK RTS5209 PCIe card reader controller
Package	48-pin LQFP

Item	Specification
Maximum supported size	SD: 2T, MMC: 16G, miniSD: 16G
Features	Supports SD Extended Capacity (SDXC), compliant with the SD Memory Card Specification Version 3.0.

System LED Indicator

Item	Specification
Power indicator	• Blue color solid on: System on • Blue color and amber color off: System off • Amber color blinking: S3 state
Battery indicator	Charging • Amber solid on - Battery charging with AC • Blue color solid on - Battery full • Amber blinking - Battery abnormal stop charge or batter in low power state Discharging • Amber and blinking - Battery in critical low state • Amber color off - Discharging state.

System DMA Specification

Hardware DMA	System Function
DMA0	Not applicable
DMA1	Not applicable
DMA2	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller
DMA5	Not applicable
DMA6	Not Assigned
DMA7	Not Assigned

System Interrupt Specification

Hardware IRQ	System function
IRQ00	System timer
IRQ01	Standard PS/2 Keyboard
IRQ08	System CMOS/real time clock
IRQ12	ELAN PS/2 Port Input Device
IRQ13	Numeric data processor
IRQ81	IRQ190 Microsoft ACPI-Compliant System

Hardware IRQ	System function
IRQ10	Intel(R) 7 Series/C216 Series Chipset Family SMBUS Host Controller – 1E22
IRQ16	Intel(R) 7 Series/C216 Series Chipset Family USB Enhanced Host Controller- 1E2D Intel(R) 7 Series/C216 Series Chipset Family PCI Express Rott Port2 – 1E12 Intel(R) 7 Management Engine Interface NVIDIA GeForce GT 640M XEON E3-1200/2nd Generation Intel(R) Core(TM) Processor Family PCI Express Root Port - 0101
IRQ17	Atheros AR5B97 Wireless Network Adapter Intel(R) 7 Series/C216 Series Chipset Family PCI Express Rott Port1 – 1E10
IRQ19	Intel(R) 7 Series/C216 Series Chipset Family PCI Express Rott Port4 – 1E16 Intel(R) Mobile Express Chipset SATA AHCI Controller
IRQ22	High Definition Audio Controller
IRQ23	Intel(R) 7 Series/C216 Series Chipset Family USB Enhanced Host Controller - 1E26
IRQ-5	Broadcom Netlink (TM) Gigibit Ethernet
IRQ-3	Intel(R) USB 3.0 eXtensible Host Controller
IRQ-2	Intel(R) HD Graphics Family

System IO Address Map

I/O address (hex)	System Function (shipping configuration)
0000 - 001F	Direct memory access controller
0000 - 0CF7	PCI bus
0020 – 0021	Programmable interrupt controller
0024 – 0025	Programmable interrupt controller
0028 – 0029	Programmable interrupt controller
002C – 002D	Programmable interrupt controller
002E – 002F	Motherboard resources
0030 – 0031	Programmable interrupt controller
0034 – 0035	Programmable interrupt controller
0038 – 0039	Programmable interrupt controller
003C – 003D	Programmable interrupt controller
0040 – 0043	System timer

I/O address (hex)	System Function (shipping configuration)
004E – 004F	Motherboard resources
0050 – 0053	System timer
0060 – 0060	Standard PS/2 Keyboard
0061 – 0061	Motherboard resources
0062 – 0062	Microsoft ACPI-Compliant Embedded Controller
0063 – 0063	Motherboard resources
0064 – 0064	Standard PS/2 Keyboard
0065 – 0065	Motherboard resources
0066 – 0066	Microsoft ACPI-Compliant Embedded Controller
0067 – 0067	Motherboard resources
0070 – 0070	Motherboard resources
0070 – 0077	System CMOS/real time clock
0080 – 0080	Motherboard resources
0081 - 0091	Direct memory access controller
0092 – 0092	Motherboard resources
0093 – 009F	Direct memory access controller
00A0 – 00A1	Programmable interrupt controller
00A4 – 00A5	Programmable interrupt controller
00A8 – 00A9	Programmable interrupt controller
00AC – 00AD	Programmable interrupt controller
00B0 – 00B1	Programmable interrupt controller
00B2 – 00B3	Motherboard resources
00B4 – 00B5	Programmable interrupt controller
00B8 – 00B9	Programmable interrupt controller
00BC – 00BD	Programmable interrupt controller
00C0 – 00DF	Direct memory access controller
00F0 – 00F0	Numeric data processor
03B0 – 03BB	Intel(R) HD Graphics Family
03C0 – 03DF	Intel(R) HD Graphics Family
0400 – 00B3	Motherboard resources
0454 – 0457	Motherboard resources
0458 – 047F	Motherboard resources
04D0 – 00B9	Programmable interrupt controller

I/O address (hex)	System Function (shipping configuration)
0500 – 057F	Motherboard resources
0680 – 069F	Motherboard resources
0D00 - FFFF	PCI bus
1000 – 100F	Motherboard resources
164E – 164F	Motherboard resources
2000 – 2FFF	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port1 – 1E10
3000 – 3FFF	XEON E3-1200/2nd Generation Intel(R) Core(TM) Processor Family PCI Express
Root Port 1 - 0101	
3F80 – 3FFF	NVIDIA GeForce GT 640M
4000 – 403F	Intel(R) HD Graphics Family
4040 – 405F	Intel(R) 7 Series/C216 Series Chipset Family SMBUS Host Controller – 1E22
4060 – 407F	Intel(R) 7 Series Chipset Family SATA AHCI Controller
4080 – 4087	Intel(R) 7 Series Chipset Family SATA AHCI Controller
4088 – 408F	Intel(R) 7 Series Chipset Family SATA AHCI Controller
4090 – 4093	Intel(R) 7 Series Chipset Family SATA AHCI Controller
4094 – 4097	Intel(R) 7 Series Chipset Family SATA AHCI Controller
0FFF – 0FFF	Motherboard resources
0FFF – 0FFF	Motherboard resources

CHAPTER 2

System Utilities

System Utilities

BIOS Setup Utility

A hardware configuration program built into a computer's BIOS (Basic Input/Output System).

Preconfigured and optimized so users do not need to run this utility. If configuration problems occur, users may need to run Setup. Refer to Chapter 4, Troubleshooting when problem arises.

To activate the BIOS Utility, press ***F2*** during POST when prompted at the bottom of screen.

The default parameter of F12 Boot Menu is set to disabled. To change boot device without entering BIOS Setup Utility, set the parameter to enabled.

To change boot device without entering the BIOS SETUP, Press <***F12***> during POST to enter multi-boot menu.

Navigating the BIOS Utility

Five menu options are:

- Information
- Main
- Security
- Boot
- Exit

To navigate through the following:

- Menu - use the left and right arrow keys
- Item - use the up and down arrow keys
- Change parameter value - press ***F5*** or ***F6***.
- Exit - Press ***Esc***
- Load default settings - press ***F9***. Press ***F10*** to save changes and exit BIOS Setup Utility

NOTE:

Parameter values can be changed if enclosed in square brackets [ ]. Navigation keys appear at the bottom of the screen. Read parameter help carefully when making changes to parameter values. Parameter help is found in the Item Specific Help area of the screen. System information is subject to specific models.

BIOS

The following is a description of the tabs found on the InsydeH20 Setup Utility screen:

NOTE:

The screens provided are for reference only. Actual values may differ by model.

Information

This tab shows a summary of computer hardware information.

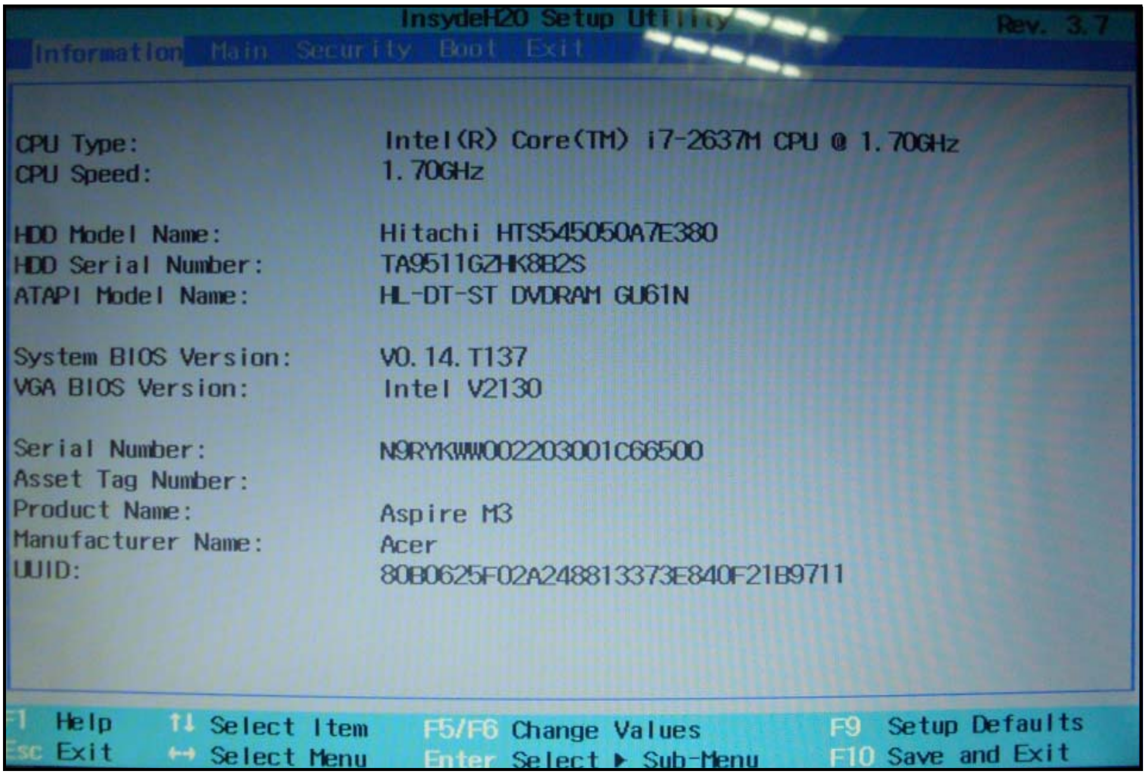


Figure 2-1. BIOS Information

Table 2-1 describes the parameters shown in Figure 2-1

Table 2-1. Parameters

Parameter	Description
CPU Type	The CPU type and speed of the system.
CPU Speed	The speed of the CPU.
HDD Model Name	The model name of HDD installed on primary IDE master.
HDD Serial Number	The serial number of HDD installed on primary IDE master.
ATAPI Model Name	The model name of the installed ODD drive.
System BIOS Version	Displays system BIOS version.
VGA BIOS Version	The VGA firmware version of the system.
Serial Number	The serial number of this unit.
Asset Tag Number	The asset tag number of the system.
Product Name	The product name of the system.
Manufacturer Name	The manufacturer Name of the system
UUID	Universally Unique Identifier (UUID) is an identifier standard used in software construction, standardized by the Open Software Foundation (OSF) as part of the Distributed Computing Environment (DCE).

Main

This tab allows the user to set system time and date, enable or disable boot option and enable or disable recovery.

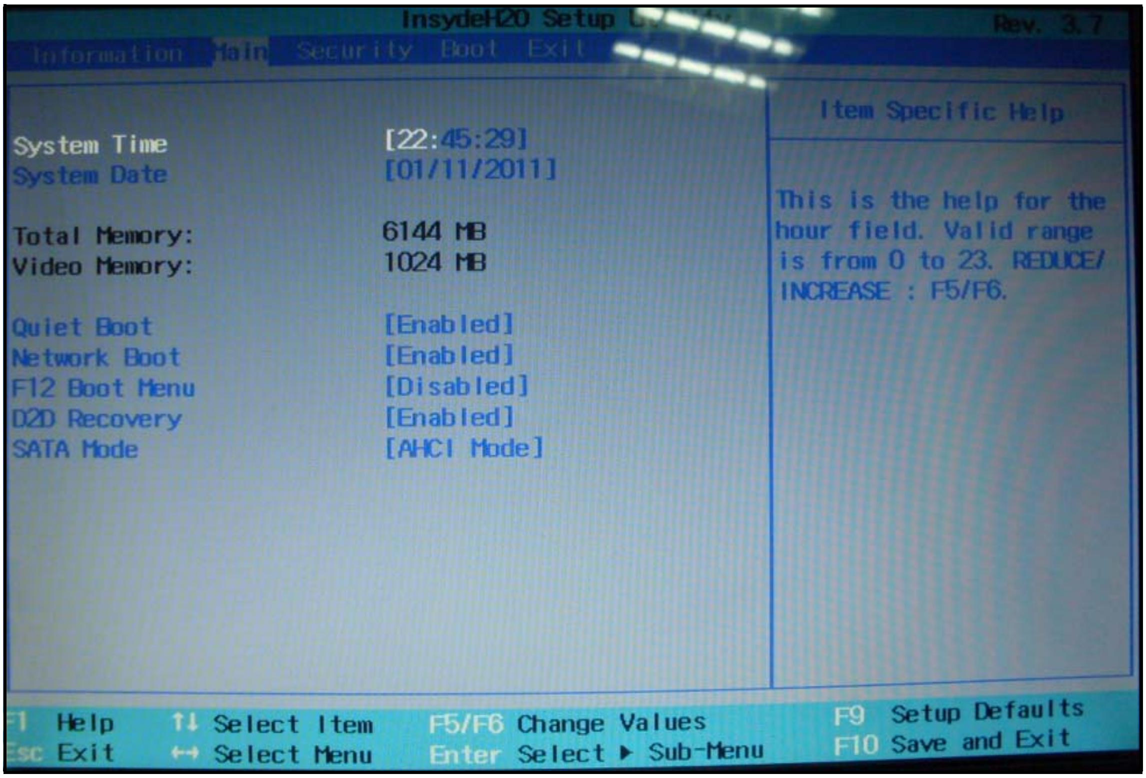


Figure 2-2. BIOS Main

Table 2-2 describes the parameters shown in Figure 2-2.

Table 2-2. BIOS Main

Parameter	Description	Format/Option
System Time	Sets the system time. The hours are shown with 24-hour format.	Format: HH:MM:SS (hour:minute:second)
System Date	Sets the system date.	Format MM/DD/YYYY (month/day/year)
Total Memory	Shows the total memory available.	N/A
Video Memory	Shows the available memory for Video.	N/A

Table 2-2. (Continued)BIOS Main

Parameter	Description	Format/Option
Quiet Boot	The notebook shows an illustration called the OEM screen during system boot instead of the traditional POST screen that shows the normal diagnostic messages.	Enabled or Disabled
Network Boot	Enables, disables the system boot from LAN (remote server).	Enabled or Disabled
F12 Boot Menu	Enables, disables Boot Menu during POST.	Enabled or Disabled
D2D Recovery	Enables, disables D2D Recovery function. The function allows the user to create a hidden partition on hard disc drive to store operation system and restore the system to factory defaults.	Enabled or Disabled
SATA Mode	Control the mode in which the SATA controller should operate.	AHCI or IDE

Security

This tab shows parameters that safeguard and protect the computer from unauthorized use.

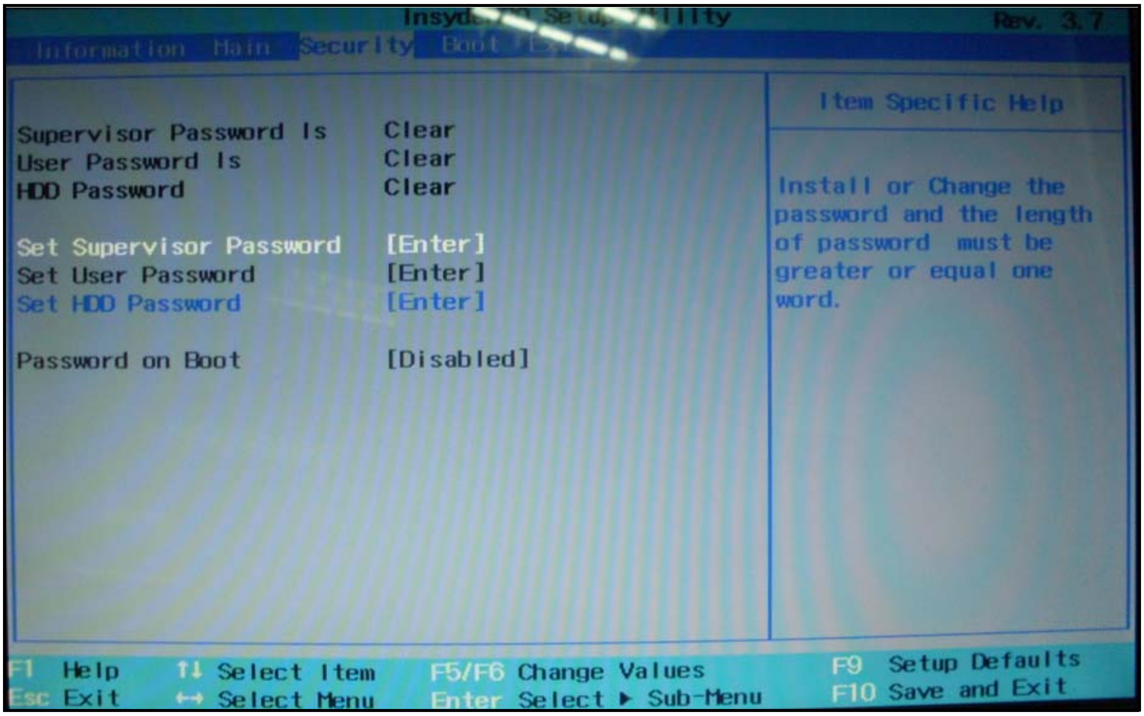


Figure 2-3. BIOS Security

Table 2-3 describes the parameters shown in Figure 2-3.

Table 2-3. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Shows the setting of the supervisor password	Clear or Set
User Password Is	Shows the setting of the user password.	Clear or Set
Set Supervisor Password	Press ***Enter*** to set the supervisor password. When set, this password protects the BIOS Setup Utility from unauthorized access. The user can not either enter the Setup menu nor change the value of parameters.	N/A
Set User Password	Press ***Enter*** to set the user password. When user password is set, this password protects the BIOS Setup Utility from unauthorized access. The user can enter Setup menu only and does not have right to change the value of parameters.	N/A
Set HDD Password	Enter HDD Password.	N/A
Password on Boot	Defines whether a password is required or not while the events defined in this group happened. The following sub-options are all requires the Supervisor password for changes and should be grayed out if the user password was used to enter setup.	Disabled or Enabled

NOTE:
When prompted to enter a password, three attempts are allowed before the system halts. Resetting the BIOS password may require the computer be returned to the dealer.

Setting a Password

Perform the following to set the user or supervisor password:

1. Use the ↑ and ↓ keys to highlight the Set Supervisor Password parameter and press ***Enter*** key. The Set Supervisor Password box appears.

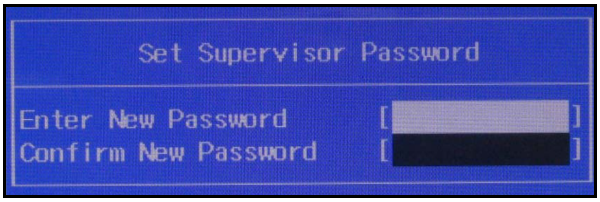


Figure 2-4. Set Supervisor Password

2. Type a new password in the *Enter New Password* field. Password length is not to exceed 8 alphanumeric characters (A-Z, a-z, 0-9, not case sensitive). Retype the password in the *Confirm New Password* field.

+ **IMPORTANT:**

Use care when typing a password. Characters do not appear on the screen.

3. Press ***Enter***. After setting the password, the computer sets the User Password parameter to Set.

NOTE:

Users can opt to enable the Password on boot parameter.

4. Press ***F10*** to save changes and exit the BIOS Setup Utility.

Removing a Password

Perform the following:

1. Use the ↑ and ↓ keys to highlight Set Supervisor Password and press ***Enter***. The Set Supervisor Password box appears:

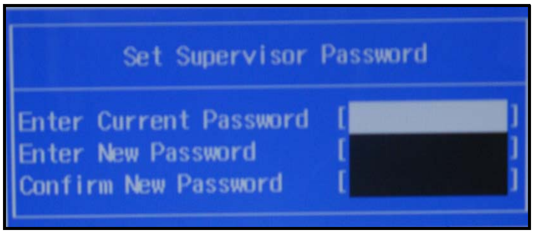


Figure 2-5. Set Supervisor Password

2. Type the current password in the *Enter Current Password* field and press ***Enter***.
3. Press ***Enter*** twice without typing anything in the *Enter New Password* and *Confirm New Password* fields. The computer then sets the Supervisor Password parameter to Clear.
4. Press ***F10*** to save changes and exit the BIOS Setup Utility.

Changing a Password

1. Use the ↑ and ↓ keys to highlight Set Supervisor Password and press the ***Enter***. The Set Supervisor Password box appears.

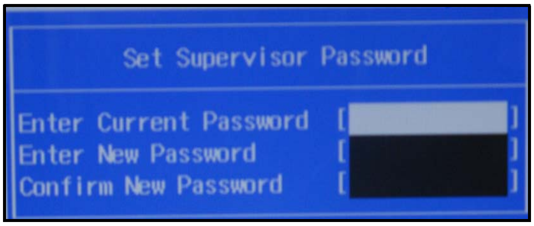


Figure 2-6. Set Supervisor Password

2. Type the current password in the *Enter Current Password* field and press ***Enter***.
3. Type a password in the *Enter New Password* field. Retype the password in the *Confirm New Password* field.

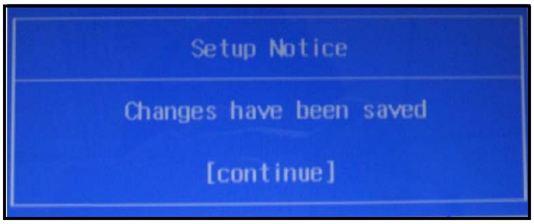


Figure 2-7. Setup Notice

4. Press ***Enter***. The computer sets User Password parameter to Set.

NOTE:

Users can enable the Password on boot parameter.

5. Press ***F10*** to save changes and exit the BIOS Setup Utility.

If the verification is OK, the screen will show as following.

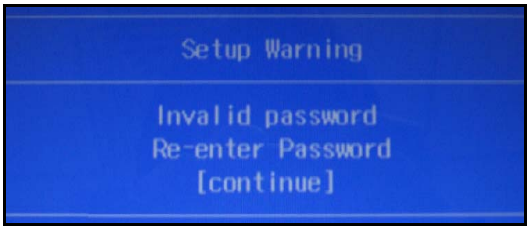


Figure 2-8. This Setup Warning

The password setting is complete after the user presses ***Enter***.

If the current password entered does not match the actual current password, the screen will show the Setup Warning (Figure 2-9).



Figure 2-9. Setup Warning

Boot

This tab allows changes to the order of boot devices used to load the operating system. Bootable devices include the:

- USB diskette drives
- Onboard hard disk drive
- DVD drive in the module bay

Use ↑ and ↓ keys to select a device and press ***F5*** or ***F6*** to move it up or down the list.

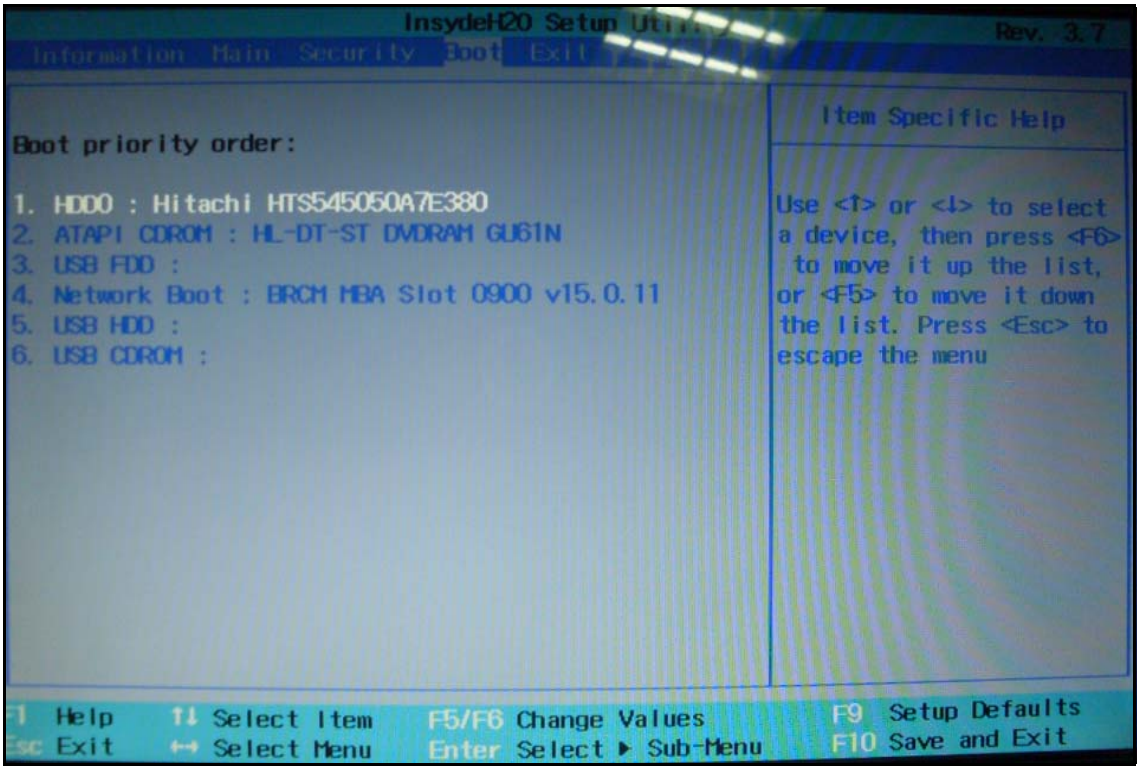


Figure 2-10. BIOS Boot

Exit

The Exit tab allows users to save or discard changes and quit the BIOS Utility.

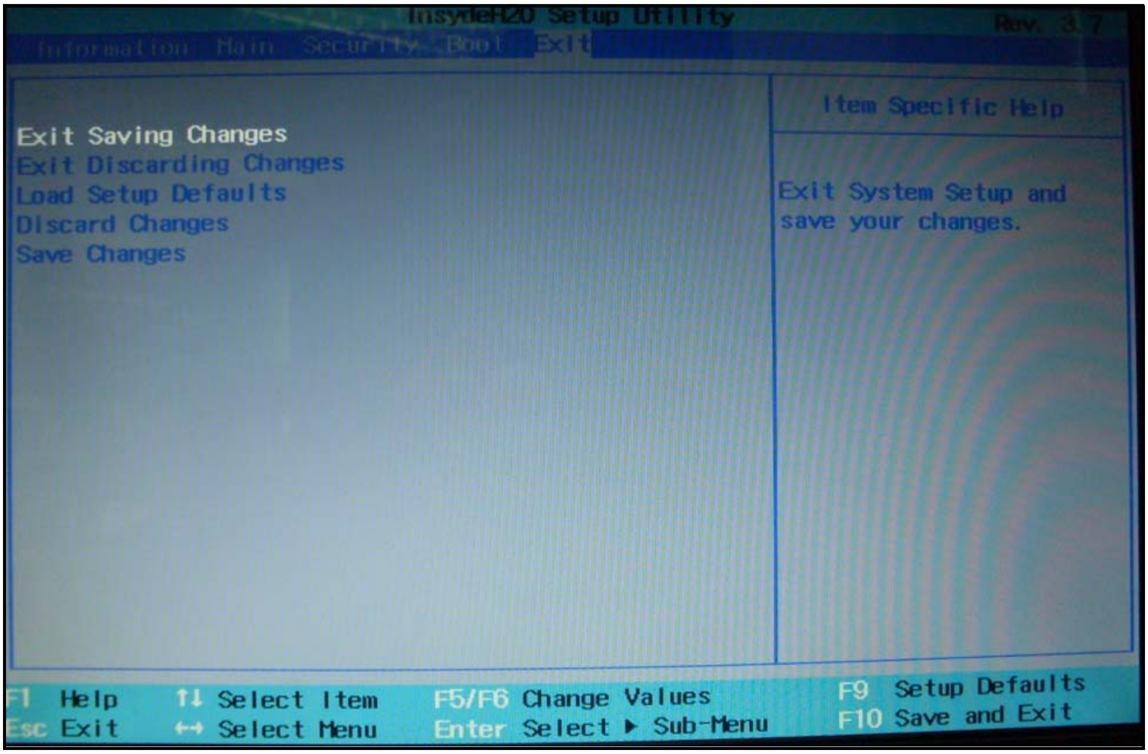


Figure 2-11. BIOS Exit

Table 2-4 describes the parameters in Figure 2-11.

Table 2-4. Exit Parameters

Parameter	Description
Exit Saving Changes	Exit System Setup and save changes to the system.
Exit Discarding Changes	Exit utility without saving setup data to.
Load Setup Default	Load default values for all setup item.
Discard Changes	Load previous values all setup items.
Save Changes	Save setup data.

BIOS Flash Utilities

BIOS Flash memory updates are required for the following conditions:

- New versions of system programs
- New features or options
- Restore a BIOS when it becomes corrupted.

Use the Flash utility to update the system BIOS Flash ROM.

NOTE:
Create a Crisis Recovery Disc, if one is not available, before the Flash utility is used.

NOTE:
Do not install memory related drivers (XMS, EMS, DPMI) when the Flash is used.

NOTE:
Use the AC adaptor power supply when running the Flash utility. If battery pack does not contain power to finish loading of the BIOS Flash, do not boot the system.

Perform the following to run the Flash:

1. Prepare a bootable diskette.
2. Copy the Flash utilities to the bootable diskette.
3. Boot the system from the bootable diskette.

NOTE:
The Flash utility has auto execution function.

DOS Flash Utility

Perform the following to use the DOS Flash Utility:

1. Press ***F2*** during boot to enter the Setup Menu.
2. Select *Boot* Menu to modify the boot priority order.

Example: If using USB HDD to Update BIOS, move USB HDD to position 1.

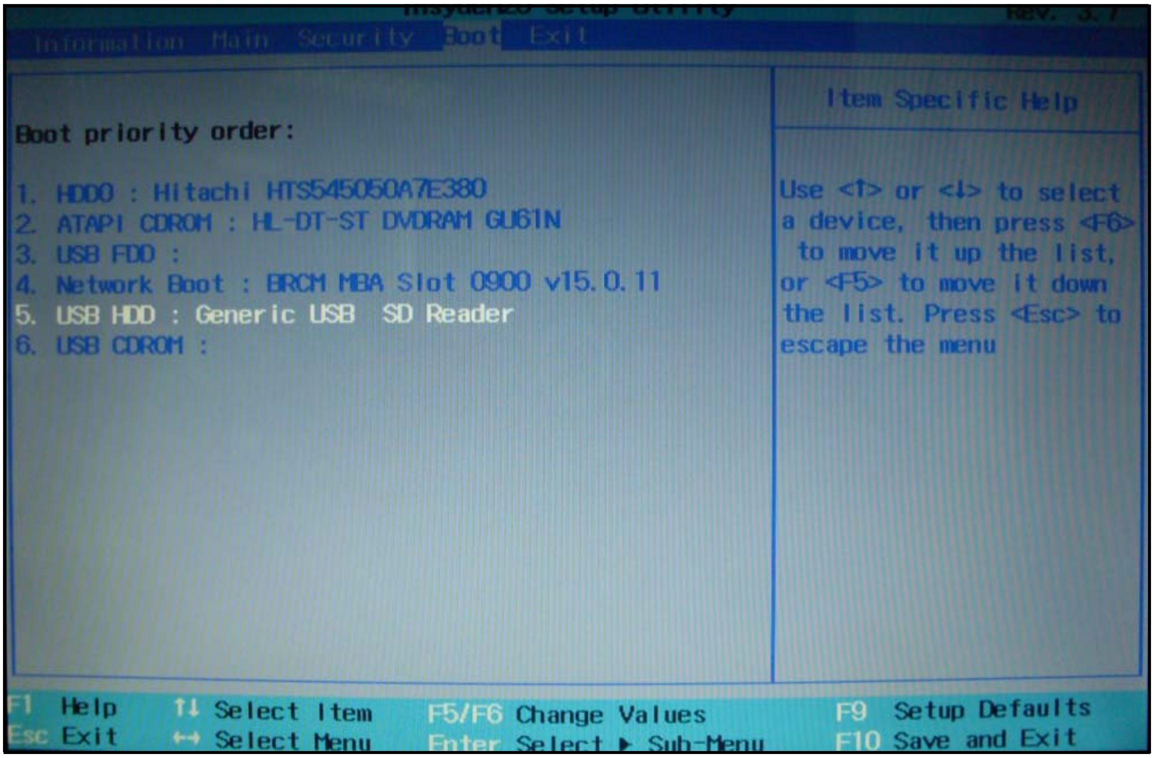


Figure 2-12. BIOS Boot

3. Execute the < *UPDATE.BAT* > batch file to update BIOS. The flash process begins as shown in Figure 2-13.



Figure 2-13. DOS Flash

4. In flash BIOS, the message *Please do not remove AC Power Source* is shown.

NOTE:

If AC power is not connected, the following message (Figure 2-14) is shown.



Figure 2-14. AC Power Warning

NOTE:

Plug in the AC power to continue.

5. Flash is complete when the message *Flash Programming Complete* is shown.

WinFlash Utility

Perform the following to use the WinFlash Utility:

1. Double click the WinFlash executable.
2. Click ***OK*** to begin the update. A progress screen is shown (Figure 2-15).

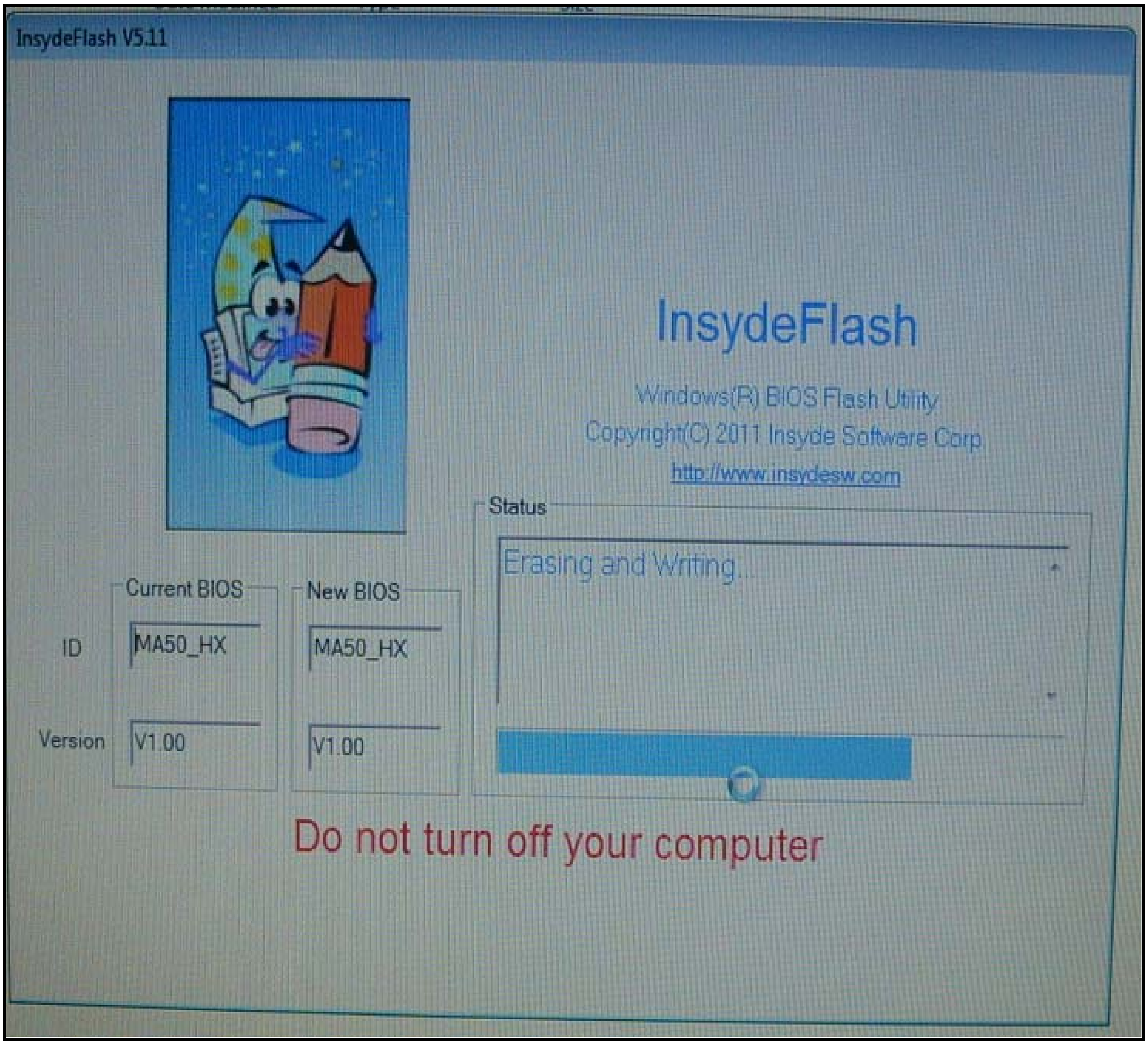


Figure 2-15. InsydeFlash

Remove HDD/BIOS Password Utilities

This section provides details for removing HDD/BIOS passwords.

Remove HDD Password Utilities

This section provides details for removing HDD passwords.

Remove HDD Password as follows:

NOTE:

If the HDD password is incorrectly entered three times, an error is generated, you will see below menu (Figure 2-16).



Figure 2-16. HDD Security

To reset the HDD password, perform the followings:

1. Select *Enter Unlock Password* option.

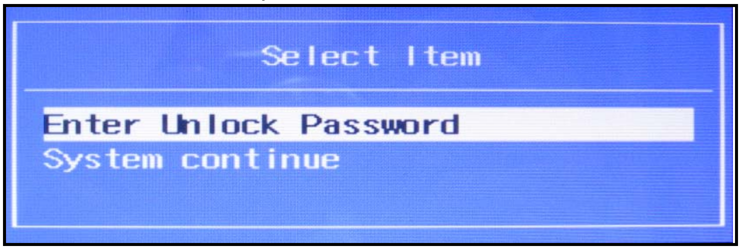


Figure 2-17. Select Item

NOTE:

An Encode key is generated for unlocking utilities. Make note if this key.

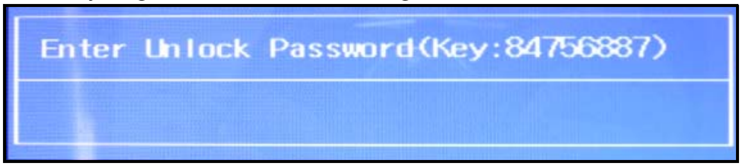


Figure 2-18. Unlock Password

2. Execute the UnlockHD.EXE file to create the unlock code in DOS Mode using the format <***UnlockHD [Encode code]*** > with the code noted in the previous step.

Example: UnlockHD 84756887

The command generates a password which can be used for unlocking the HDD.
Password: 38534209

Enter the password from the Step 1 to unlock the HDD (Figure 2-19).

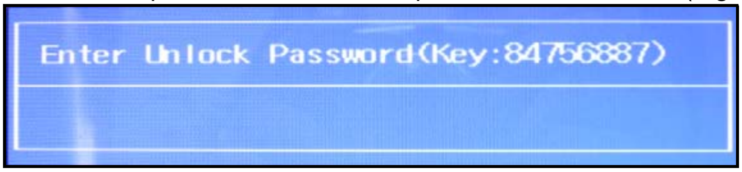


Figure 2-19. Unlock Password

NOTE:

After customer clearing the HDD password, HDD maybe in “Frozen” state. Please power off system. Then, power on to Win system, HDD Password will be in normal.

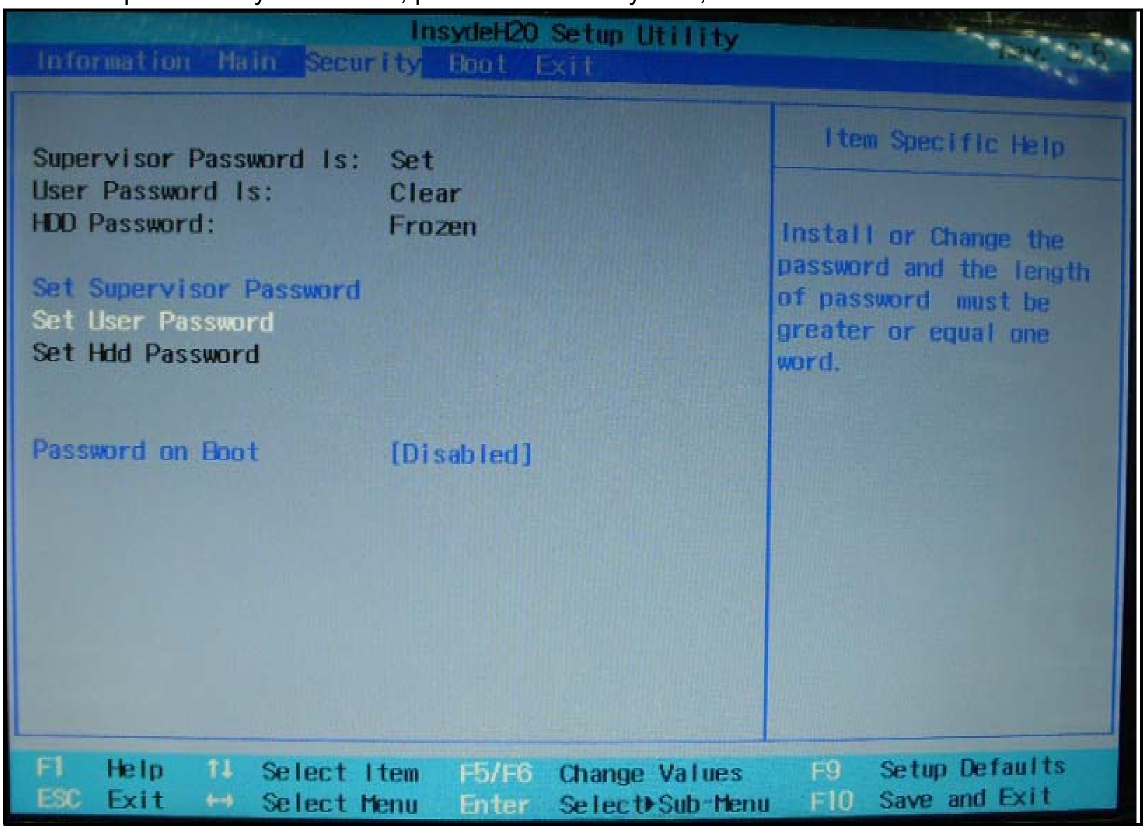


Figure 2-20. HDD Password Frozen

Removing BIOS Passwords

To clear User or Supervisor passwords, open the DIMM door and use a metal instrument to short the RTCRST# point.(Figure 2-21 and Figure 2-22)

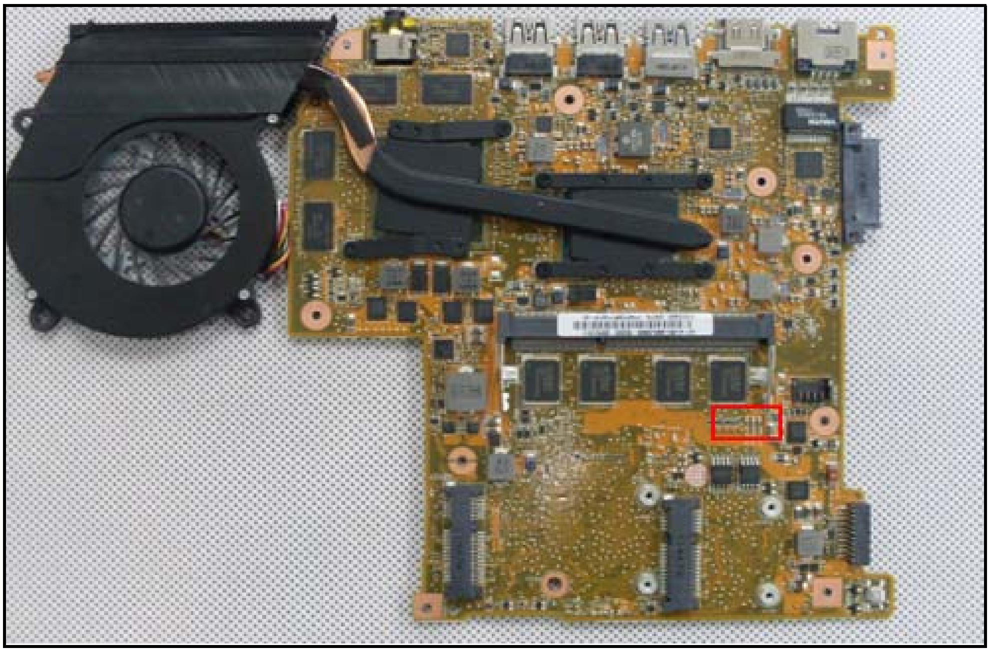


Figure 2-21. CMOS Jumper

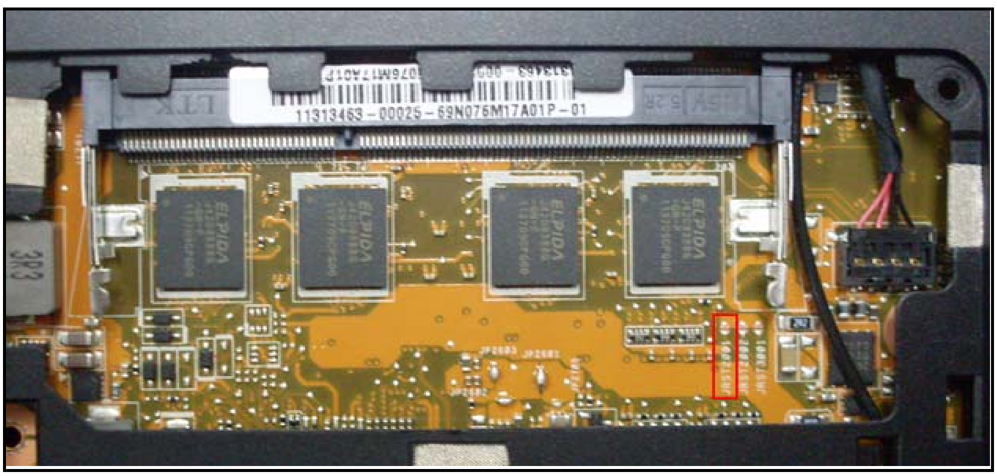


Figure 2-22. CMOS Jumper

Cleaning BIOS Passwords

When customer forgets the BIOS supervisor/user password, he could clear the password as below:

1. Prepare a USB flash disk with FAT32 file system and copy Disablepassword.efi file to root directory.
2. After pressing power button, to hold ***Ctrl*** and ***Alt*** key and then continually stroke ***Enter*** key until POST LOGO finish.
3. System will display "Press Y or y key to clear BIOS password.".
4. After press Y/y key, BIOS will clear BIOS password and reboot system.

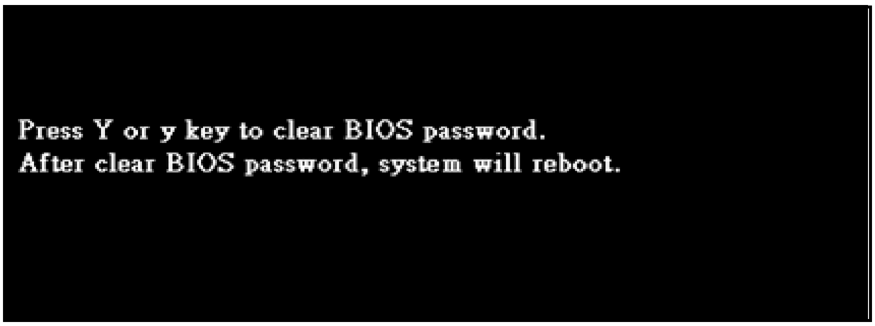


Figure 2-23. Clear BIOS Password

The on screen message indicates the function success.

NOTE:
This document is for Pegatron Acer project in 2012.

Using DMI Tools

The DMI (Desktop Management Interface) Tool copies BIOS information to EEPROM. Used in the DMI pool for hardware management.

1. Execute < ***MN.bat*** > to update SMBIOS Type 1 Manufacturer Name(Figure 2-23).

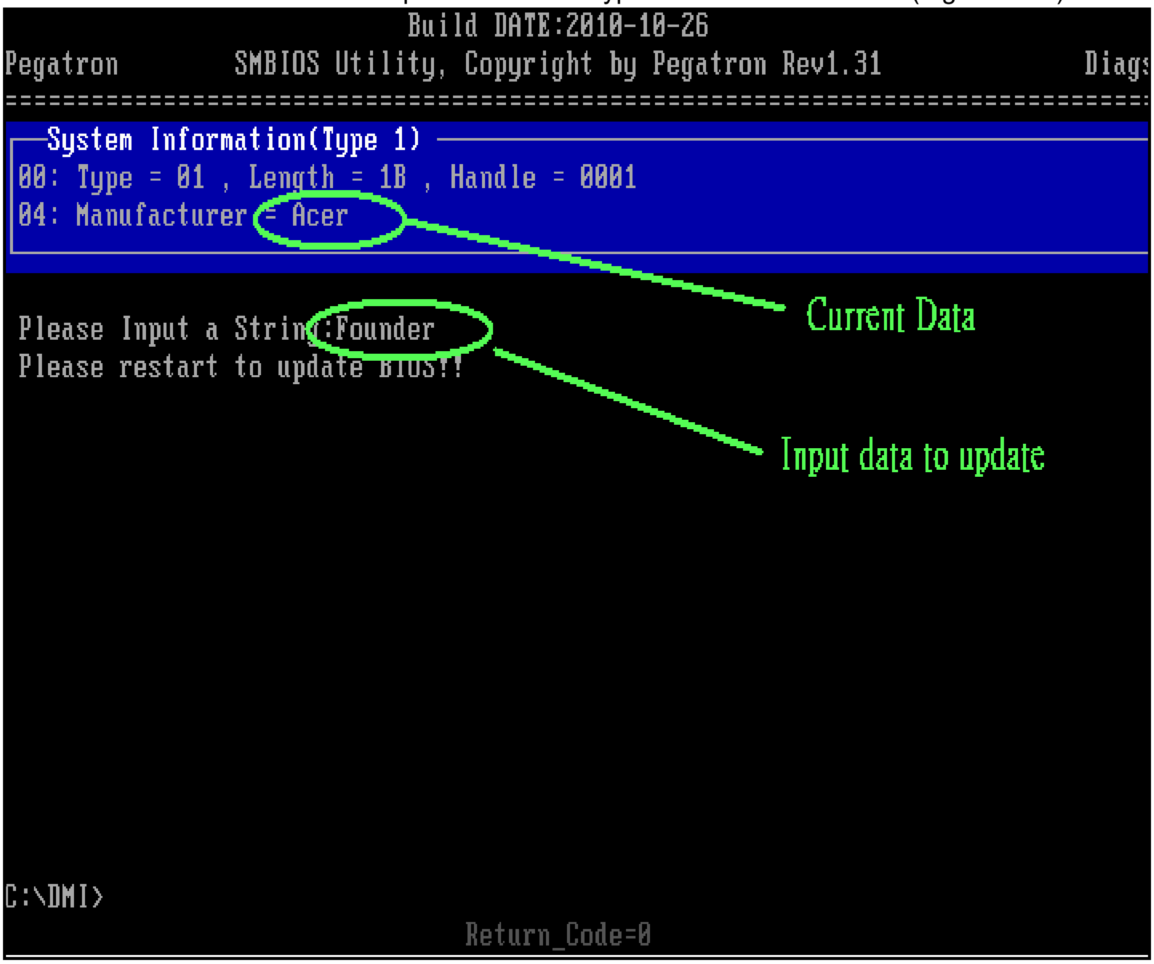


Figure 2-24. Manufacture Name

2. Execute < ***PN.bat*** > to update SMBIOS Type 1 Product Name(Figure 2-24).

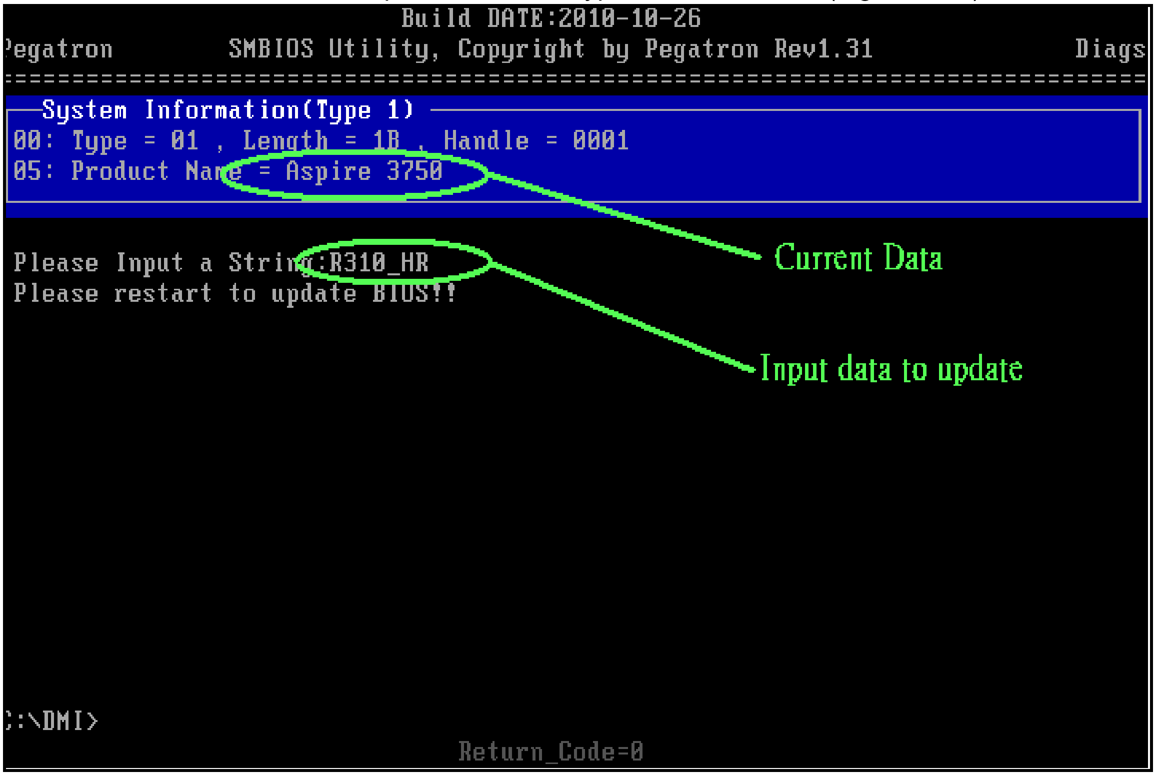


Figure 2-25. Update Product Name

3. Execute < ***SN.bat*** > to update SMBIOS Type 1 Serial Number(Figure 2-25).

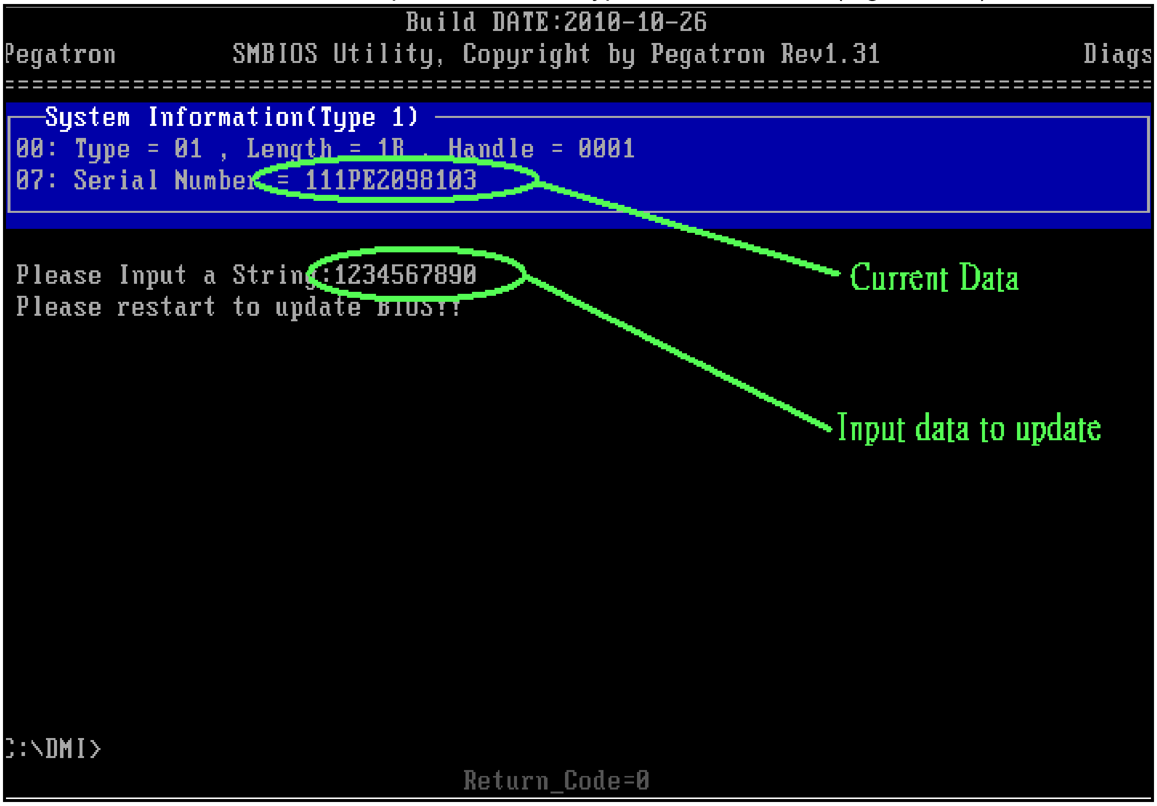


Figure 2-26. Update Serial Number

4. Execute < ***AT.bat*** > to update SMBIOS Type 3 Asset Tag Number(Figure 2-26).

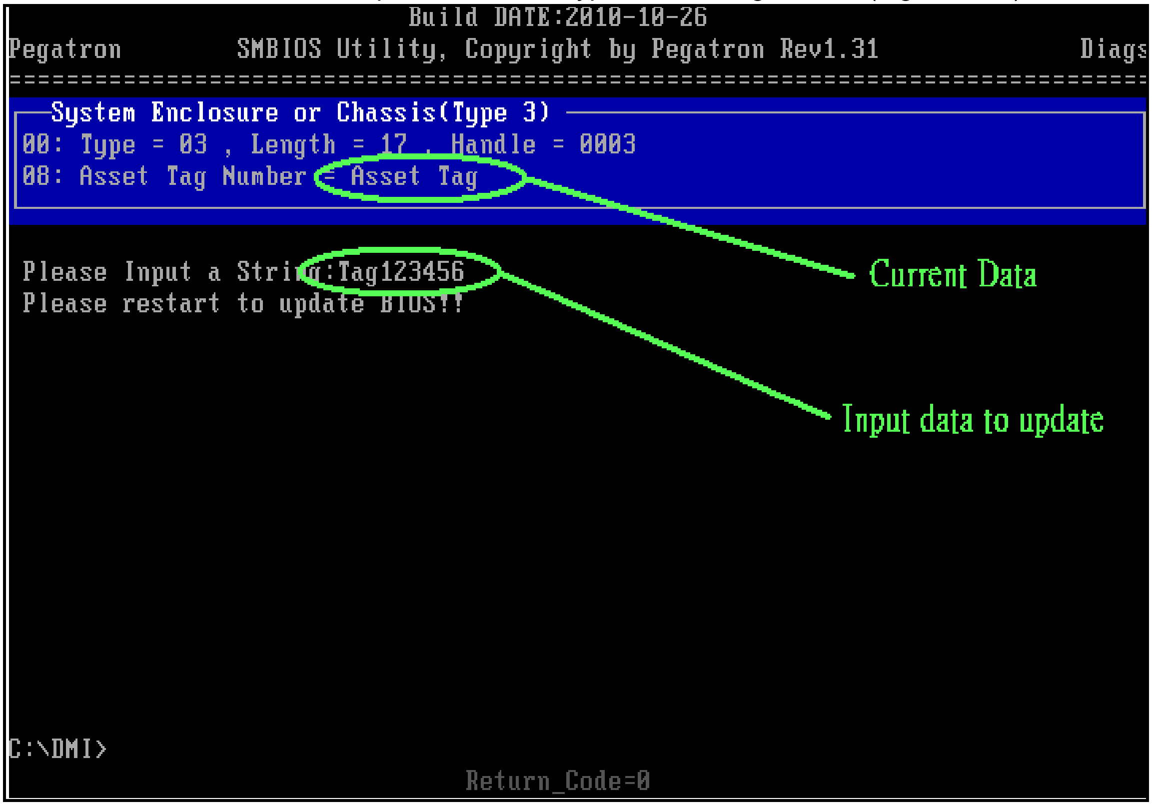


Figure 2-27. Update Asset Tag

5. Execute < ***RU.bat*** > to read SMBIOS Type 1 UUID(Figure 2-27).

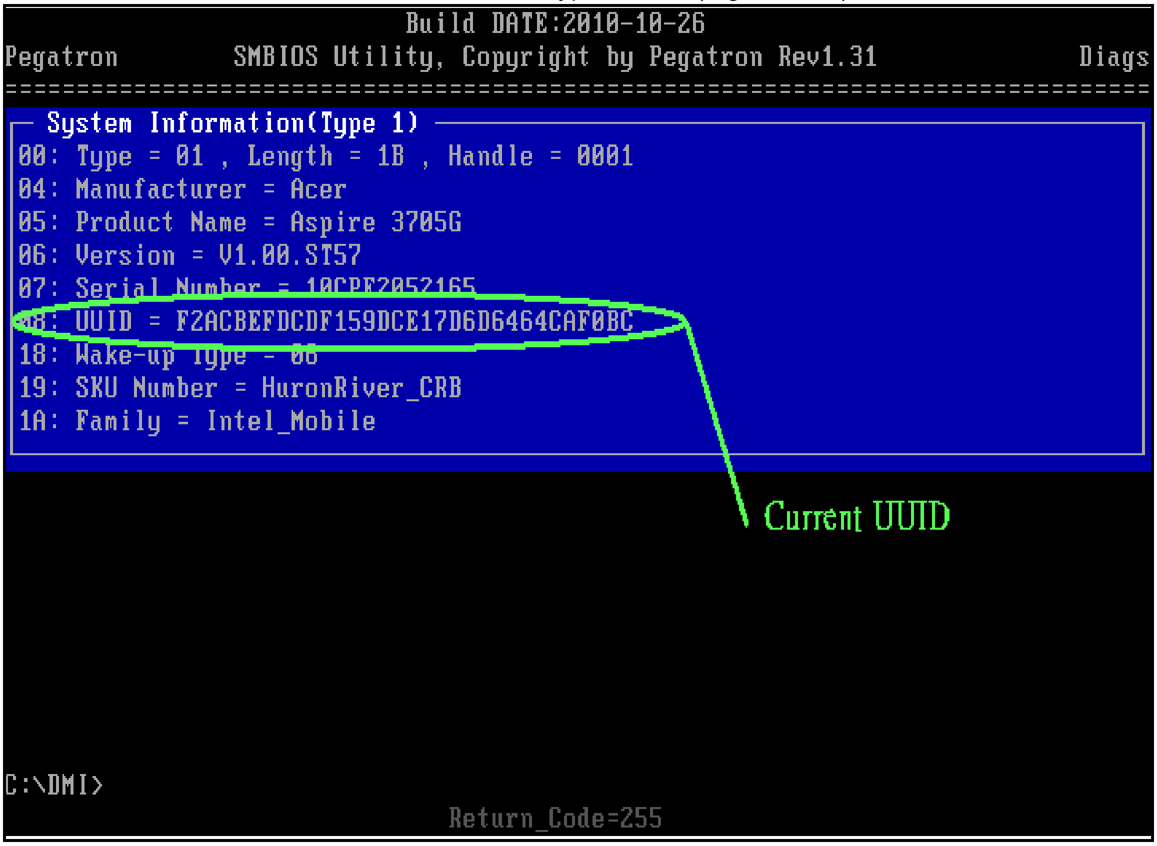


Figure 2-28. Read UUID

6. Execute < ***WU.bat*** > to write SMBIOS Type 1 UUID(Figure 2-28).

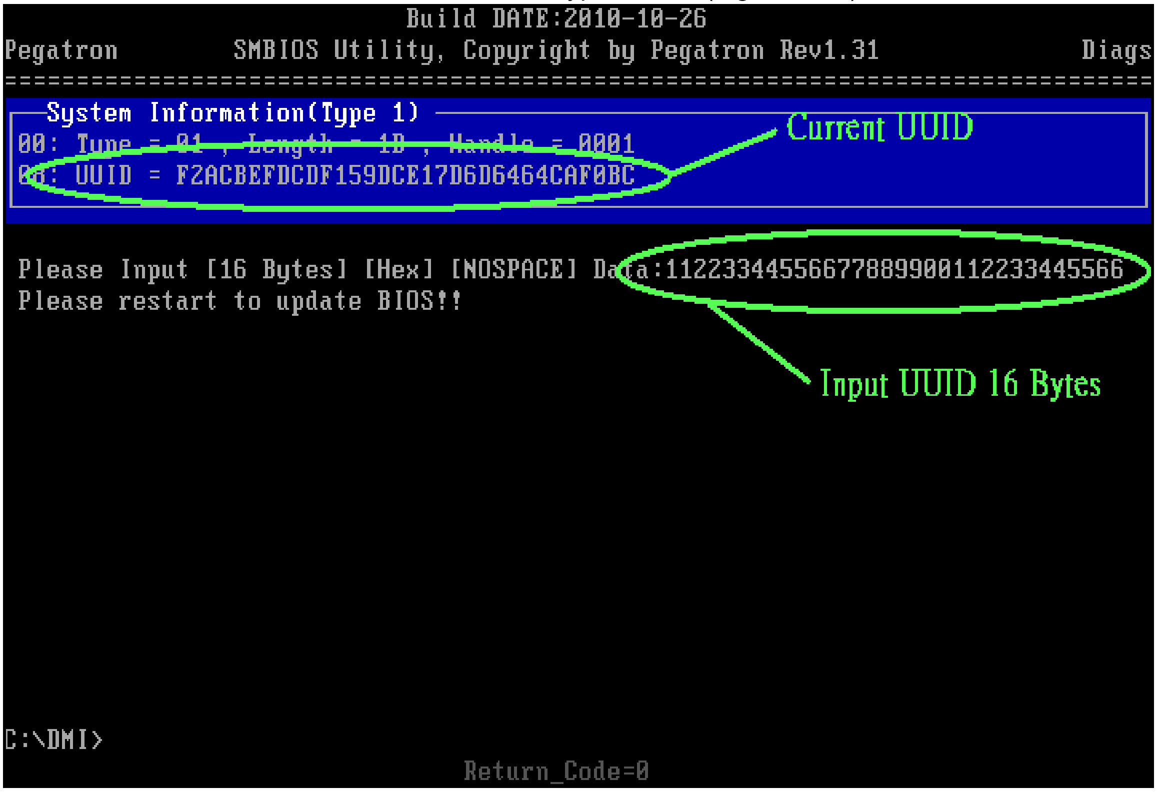


Figure 2-29. Write UUID

7. Execute < ***GU.bat*** > to generate and write SMBIOS Type 1 UUID (Figure 2-29).

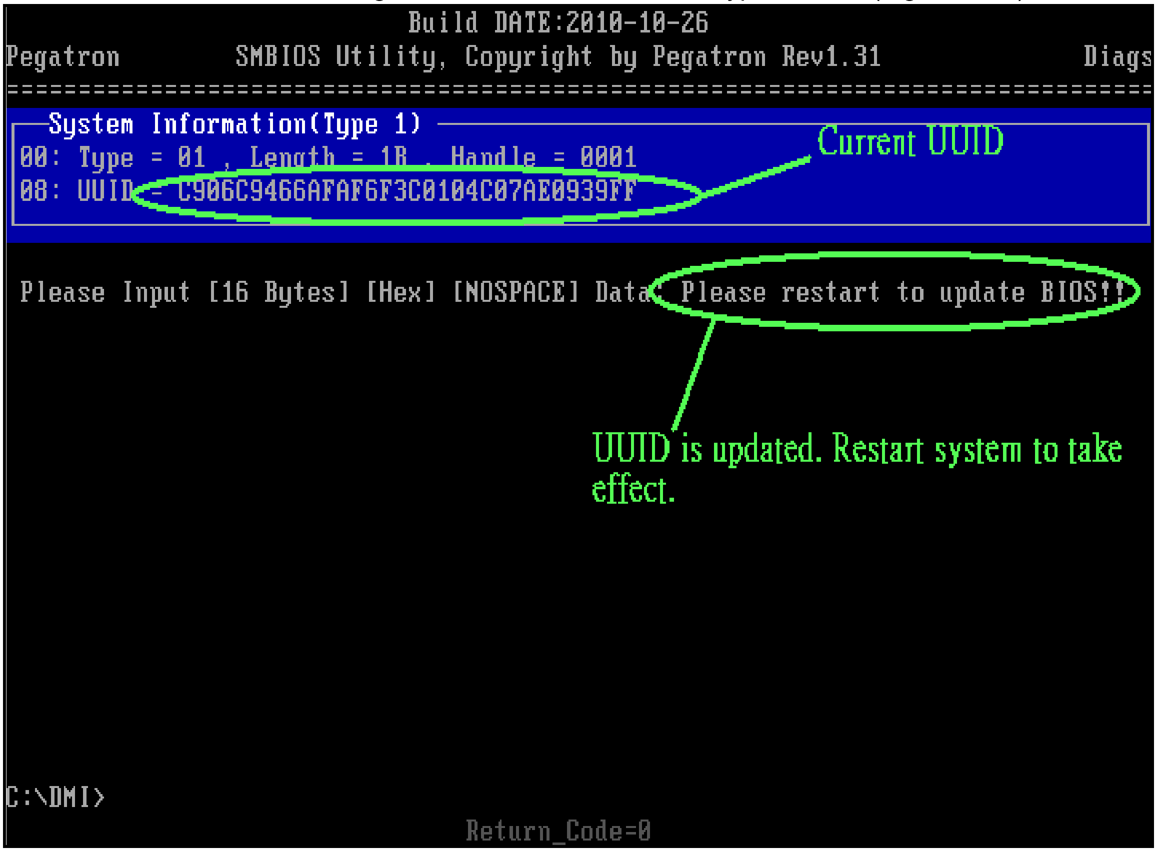


Figure 2-30. Generate and write UUID

LAN MAC EEPROM Utility

LAN EEPROM Utility enables to change the MAC address.

Perfer the following steps to use the LAN EEPROM Utility:

1. Create a DOS bootable USB HDD.
2. Copy the AN MAC EEPROM Utility to the HDD and remove the HDD form the computer.
3. Reboot the computer and press ***F2*** during the boot sequence to enter the setup menu.
4. Select the Boot menu item and move the entry “USB HDD” to the first position. Refer to Boot.
5. Insert the USB HDD and reboot the computer.
6. At the command prompt, navigate to the C Root folder.
7. Run B57diag –b57eng(Figure 2-31).

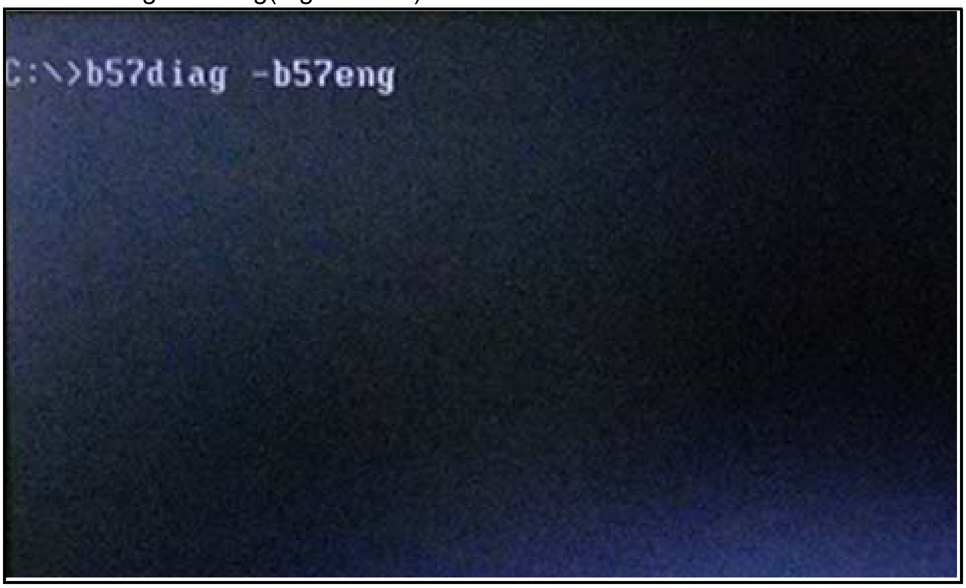


Figure 2-31. Execute MAC TOOL

8. Enter Broadcom utility screen, then key in “secfg” command to show configuration screen.

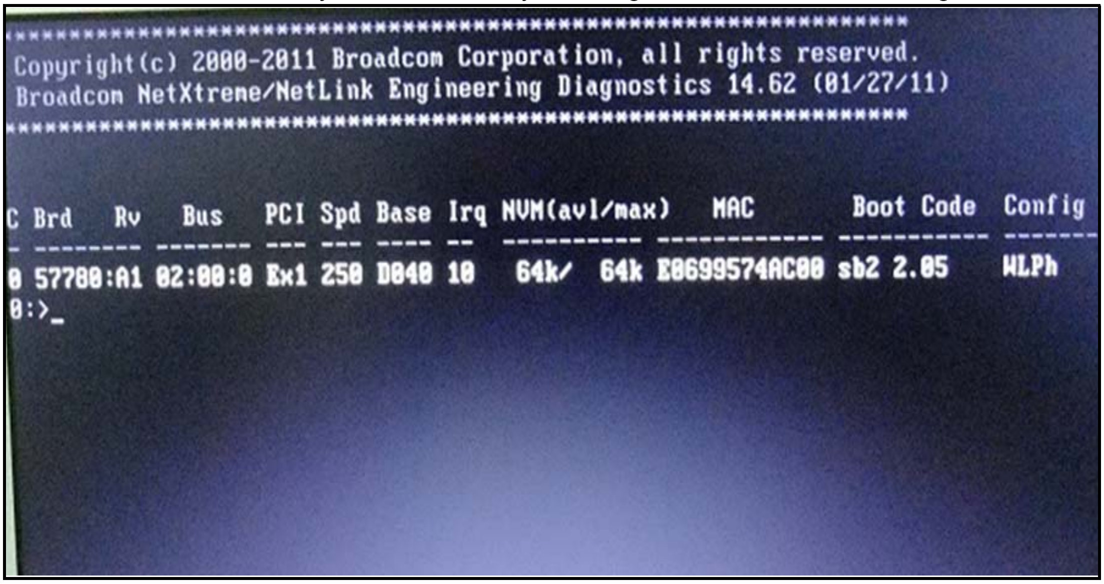


Figure 2-32. Broadcom utility screen

9. Enter configuration

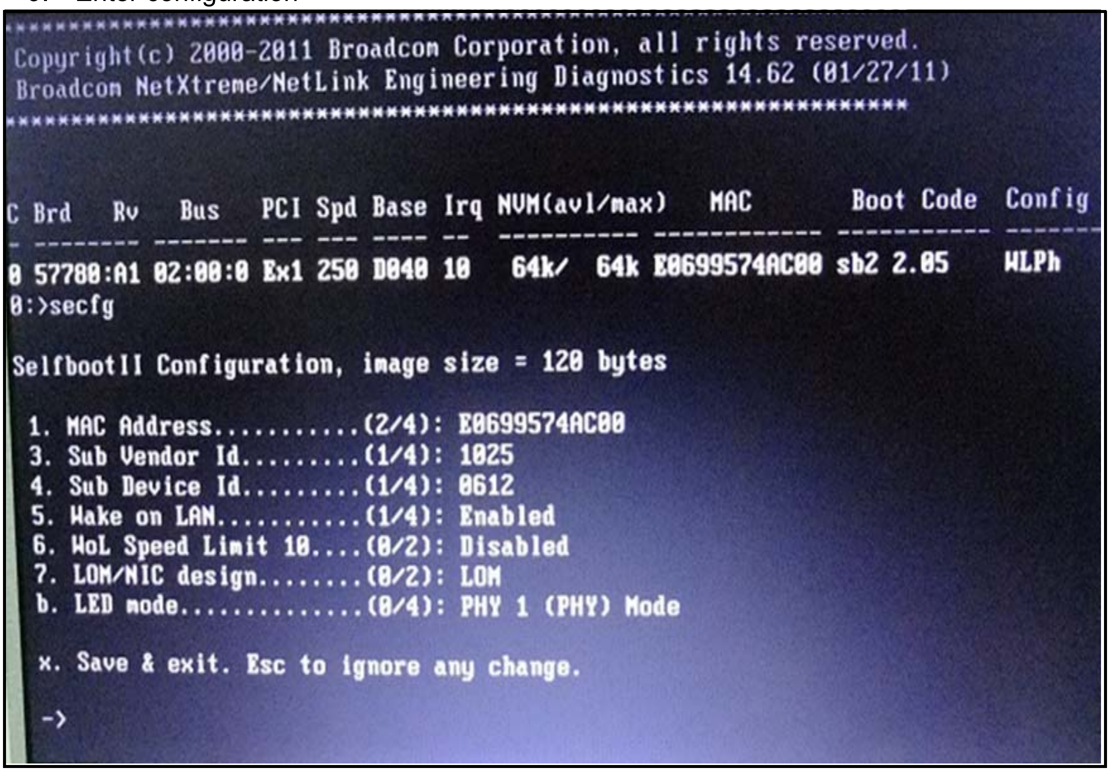


Figure 2-33. Configuration Screen

10. You can see the current MAC address in item1 and key in “1” to edit MAC address

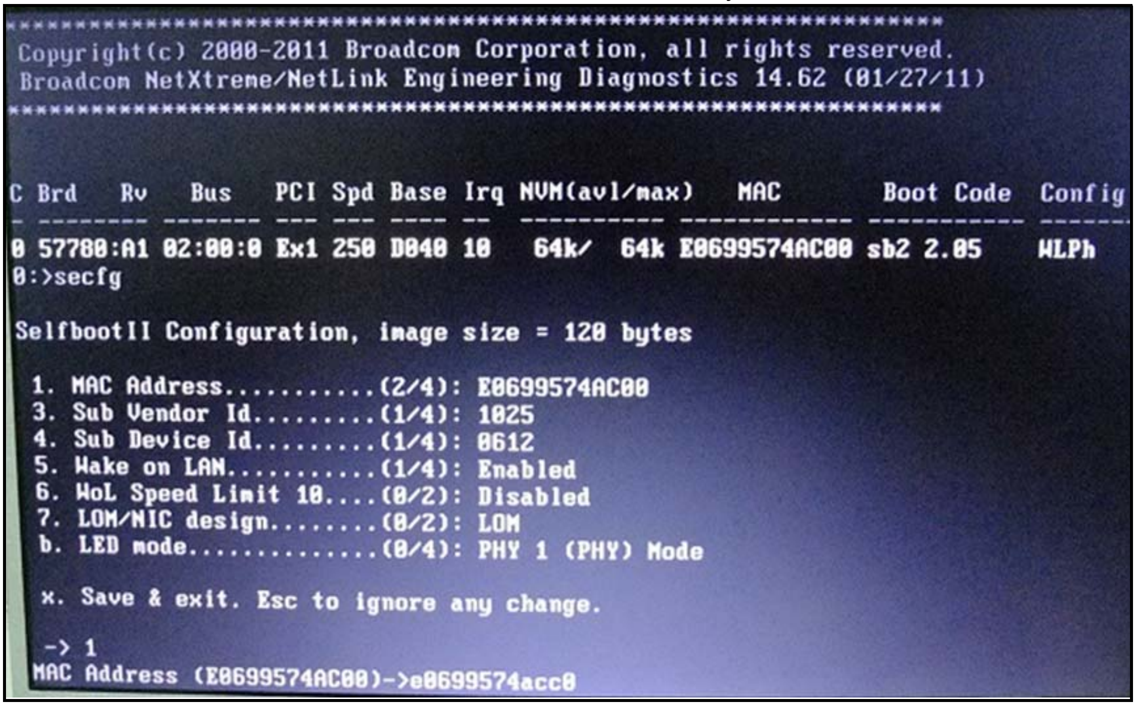


Figure 2-34. Edit MAC address

11. The new MAC address had changed in item1

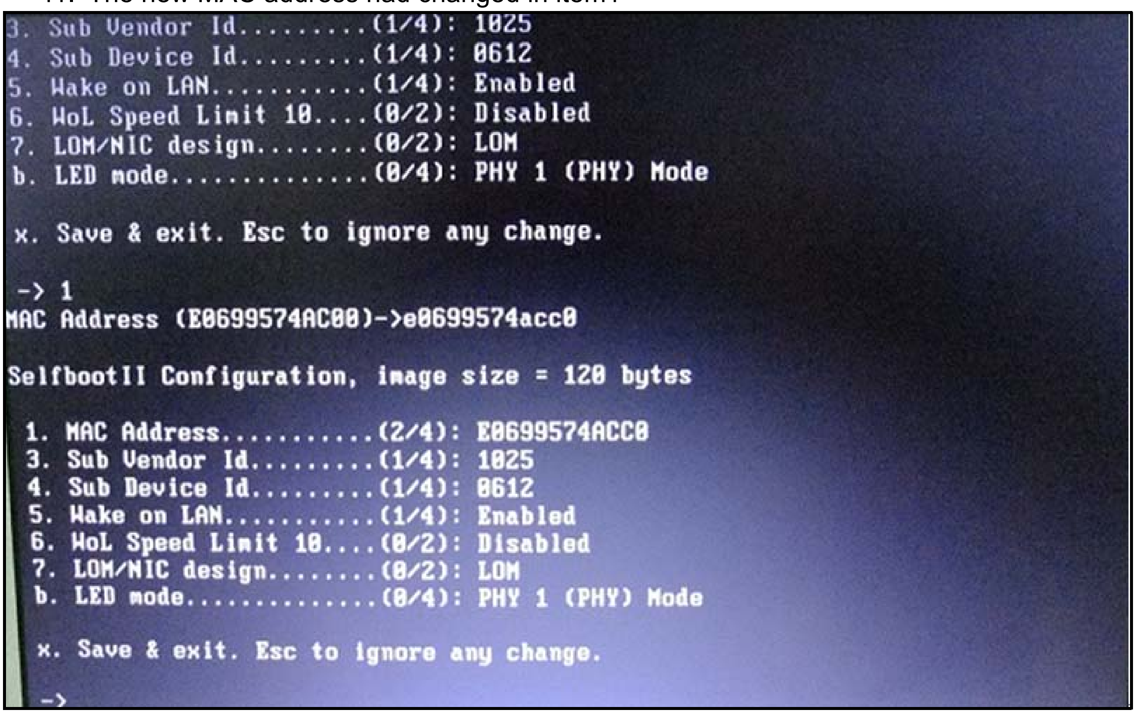


Figure 2-35. MAC address Changed

12. Key in “x” key to save and exit configuration

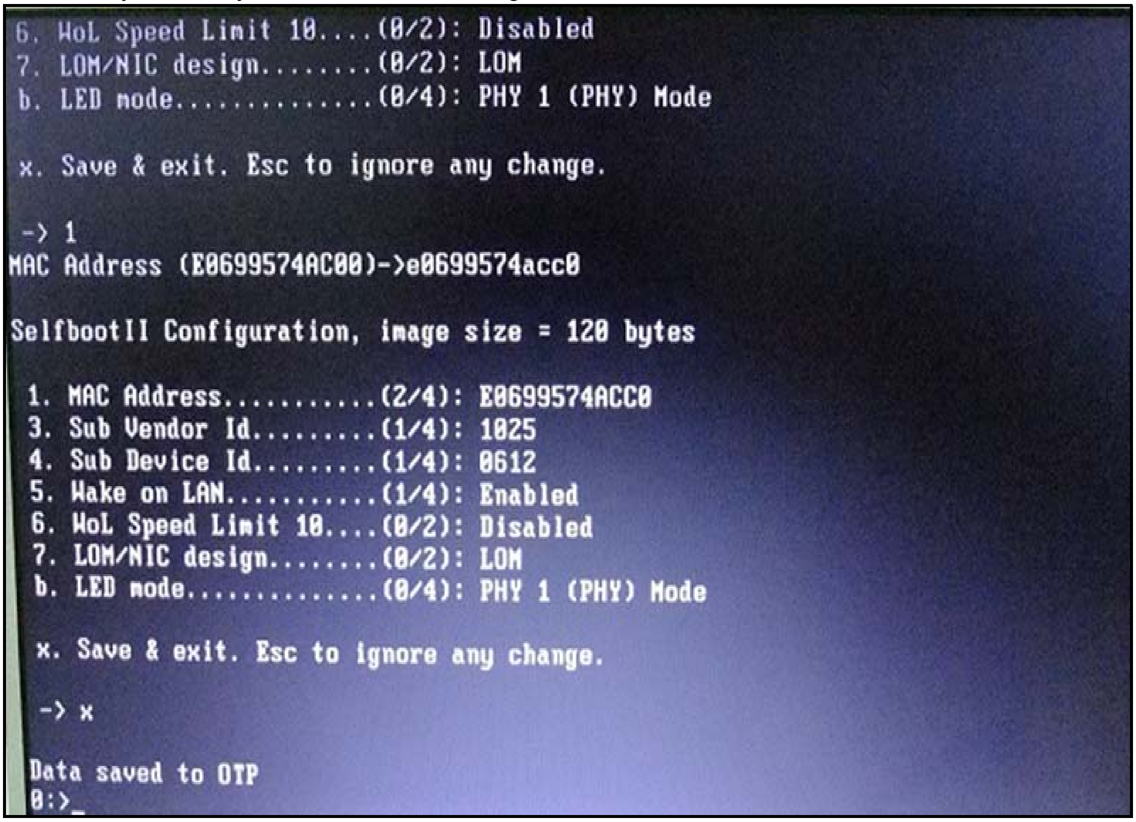


Figure 2-36. Exit configuration

13. Key in "q" to exit Broadcom program

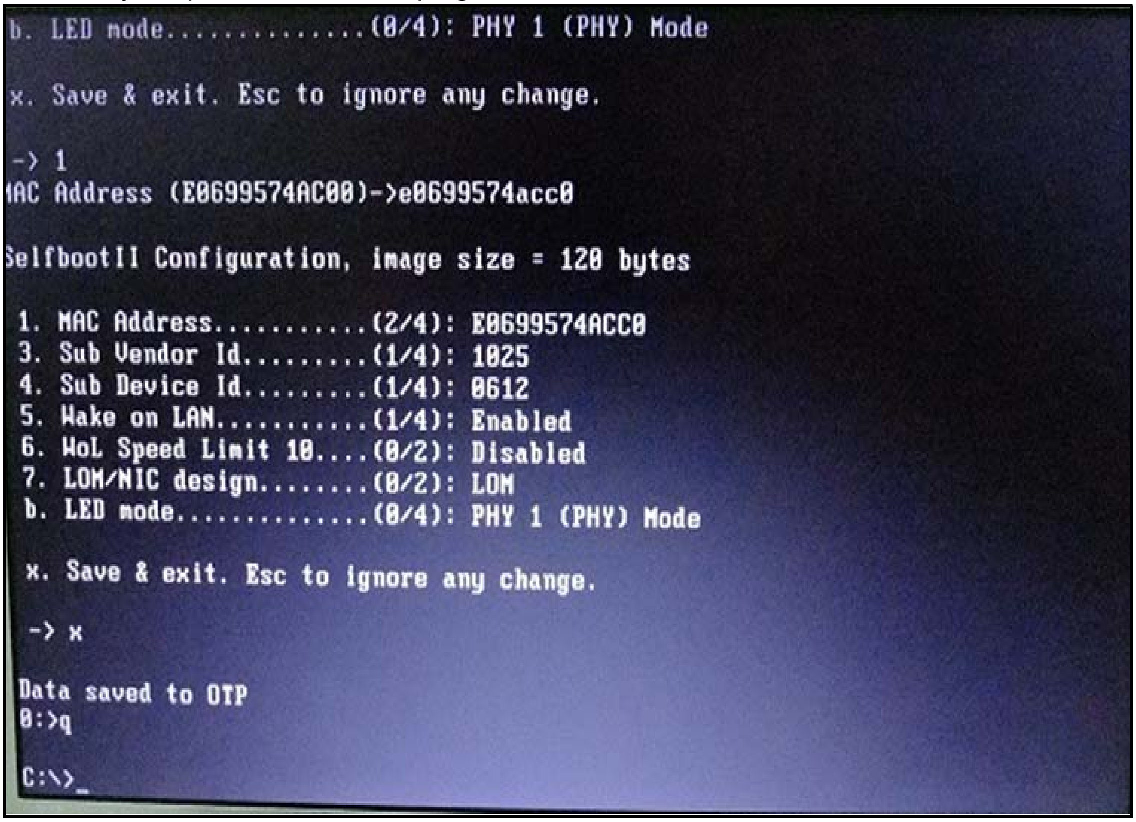


Figure 2-37. Exit Broadcom program

CHAPTER 3

Machine Maintenance

Machine Disassembly and Replacement

This chapter contains step-by-step procedures on how to disassemble the notebook computer for maintenance and troubleshooting.

Cable paths and positioning may not represent the actual model. During the removal and installation of the components, ensure all available cable channels and clips are used and that the cables are replaced in the same position.

The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

The product previews seen in the disassembly procedures may not represent the final product color or configuration.

Recommended Equipment

To disassemble the computer, the following tools are suggested:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge
- Flat screwdriver
- Philips screwdriver
- Plastic flat screwdriver
- Plastic tweezers
- Cyanoacrylate glue

Replacement Requirements

NOTE:

Cabling and components require adhesive to be applied during the replacement and reassembly process.

Pre-disassembly Instructions

Before proceeding with the disassembly procedure, make sure to do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.



Figure 3-1. AC Adapter

3. Place the system on a flat, stable surface.

Disassembly Process

The disassembly process is divided into the following sections:

- **External components disassembly**
- **Main unit disassembly**
- **LCD module disassembly**

The flowcharts provided in the succeeding disassembly sections illustrate the entire disassembly sequence. Observe the order of the sequence to avoid damage to any of the hardware components. For example, when removing the mainboard, remove first the keyboard, and LCD module then disassemble the inside assembly frame in that order.

Table 3-1. Main Screw List

Screw	Quantity	Acer Part Number
M2*2.5 Ni	6	86.W750U.003
M2*3 Ni	35	86.RY8N5.006
M2.5*5 Ni	7	86.B050U.001
M2*2 Ni	5	86.RY8N5.003
M2*6 Ni	10	86.RN60U.002
M2*2L+4.2MM Ni	4	86.RY8N5.001

External Module Disassembly Process

Table 3-2. Screw List

Step	Screw	Quantity	Part No.
WLAN Module Disassembly	M2*3	1	86.RY8N5.006
SSD Module Disassembly	M2*3	1	86.RY8N5.006
ODD Module Disassembly	M2*3	1	86.RY8N5.006
ODD Bracket Disassembly	M2*2.5	2	86.W750U.003

External Modules Disassembly Flowchart

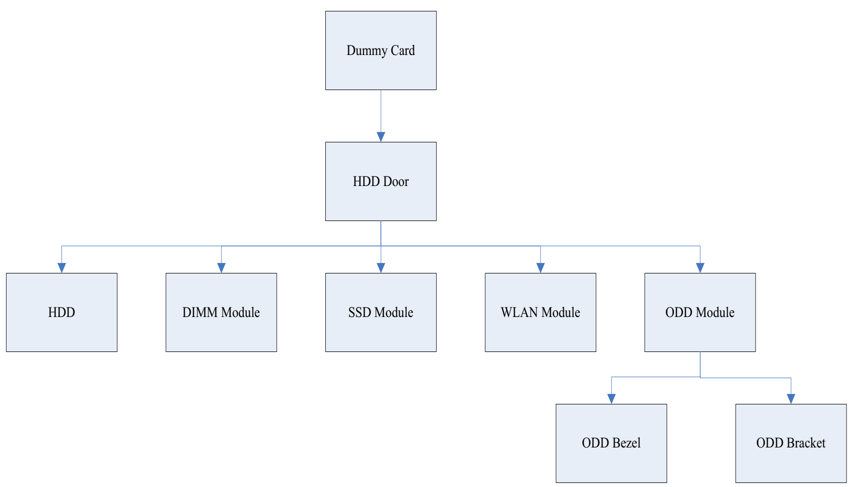


Figure 3-2. External Module Disassembly Flowchart

Removing the Dummy Card

1. Press the dummy card in to allow it to spring out.



Figure 3-3. Dummy Card

2. Pull the dummy card out.



Figure 3-4. Dummy Card

Removing the HDD Door

1. Loosen the 3 captive screws.



Figure 3-5. HDD Door Screws

2. Lift the HDD door to remove.



Figure 3-6. HDD Door

Removing the HDD Module

1. Using tweezers, lift the pull tab out if lodged behind the HDD.
2. Hold the tab and lift the HDD.



Figure 3-7. HDD Module

3. Disconnect the HDD and the SATA cable.

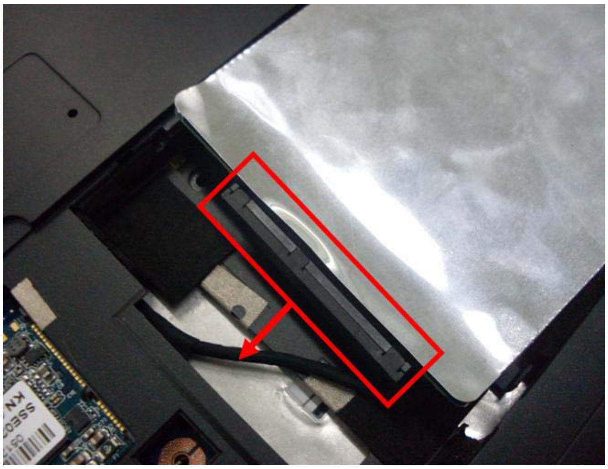


Figure 3-8. HDD Module

Removing the DIMM Module

1. Using fingers, push the memory module clips outwards.

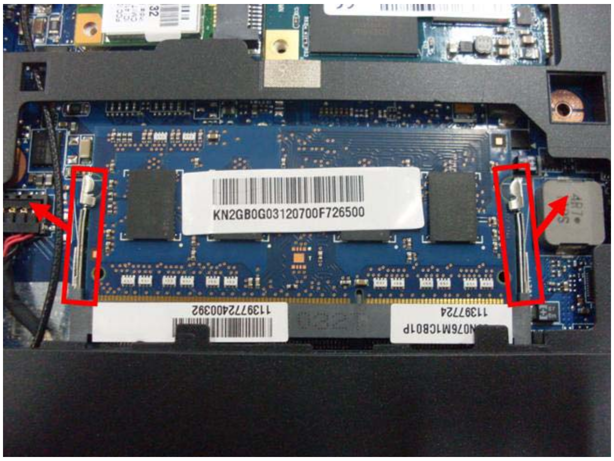


Figure 3-9. DIMM Module

2. Hold the module and pull the DIMM module from the connector.
3. Repeat for additional modules if present.

Removing the SSD Module

1. Remove the only one screw .



Figure 3-10. SSD Module

Table 3-3. Screws

Step	Screw	Quantity	Screw Type
SSD module Disassembly	M2*3Ni	1	

2. Remove the SSD module.



Figure 3-11. SSD Module

Removing the WLAN Module

1. Disconnect the two cables from the WLAN module.

+ **IMPORTANT:**

Note the position of the Main (black) and Auxiliary (white) connectors.



Figure 3-12. WLAN Module

2. Remove the screw and ensure the cables are well clear of the module.



Figure 3-13. WLAN Module

Table 3-4. Screws

Step	Screw	Quantity	Screw Type
WLAN Module Disassembly	M2*3	1	

3. Pull the WLAN module out and away.



Figure 3-14. WLAN Module

Removing the ODD Module

1. Remove the screw from the ODD module.



Figure 3-15. ODD Module

Table 3-5. Screws

Step	Screw	Quantity	Screw Type
ODD Module Disassembly	M2*3	1	

2. Pull the ODD completely out of the bay.



Figure 3-16. ODD Module

3. Remove the 2 screws from the ODD bracket.



Figure 3-17. ODD Module

Table 3-6. Screws

Step	Screw	Quantity	Screw Type
ODD Bracket Disassembly	M2*2.5	2	

4. Remove the ODD bracket.

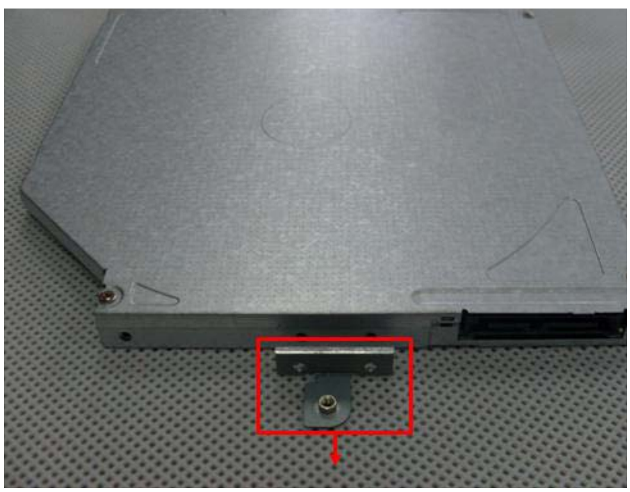


Figure 3-18. ODD Bracket

5. Pry the ODD bezel off the ODD module.



Figure 3-19. ODD Bezel

Main Unit Disassembly Process

Main Unit Disassembly Flowchart

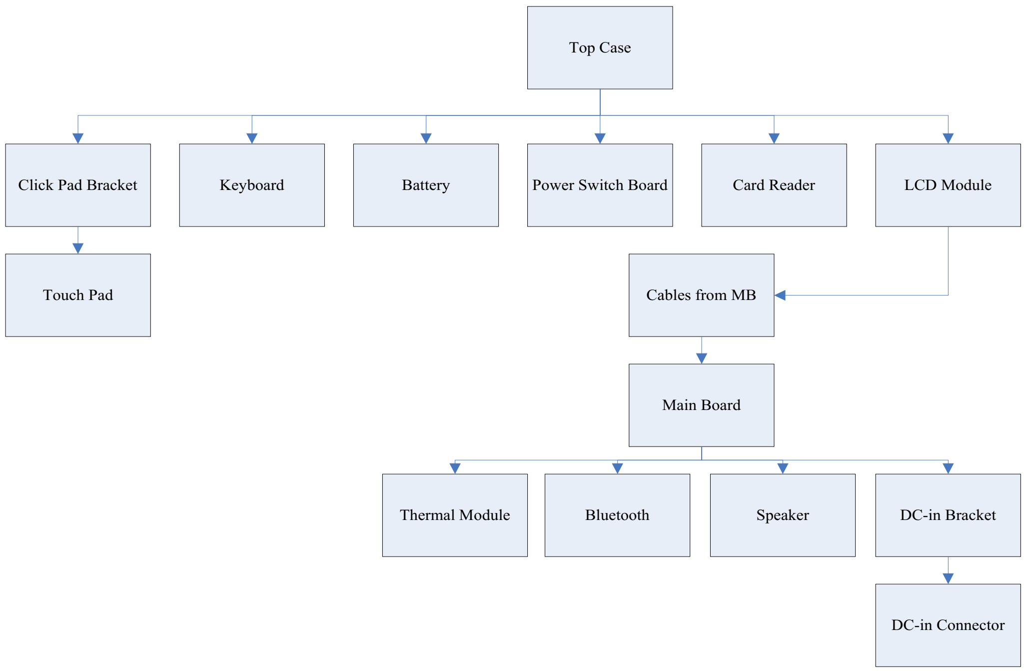


Figure 3-20. Main Unit DIsassembly Flowchart

Table 3-7. Screws

Step	Screw	Quantity	Part No.
Bottom case Disassembly	M2*6	10	86.RN60U.002
	M2*3 Ni	1	86.RY8N5.006
Click pad Disassembly	M2*3 Ni	2	86.RY8N5.006
Touchpad Board Disassembly	M2*2 Ni	2	86.RY8N5.003
Keyboard Disassembly	M2*2	3	86.RY8N5.003
	M2*3 Ni	16	86.RY8N5.006
Battery Disassembly	M2*3 Ni	1	86.RY8N5.006
Card reader Disassembly	M2*3 Ni	2	86.RY8N5.006
LCD module Disassembly	M2.5*5 Ni	5	86.B050U.001
Mainboard Module	M2*3 Ni	4	86.RY8N5.006
Thermal Module	M2*3 Ni	6	86.RY8N5.006
Fan to Bottom case	M2.5*5	2	86.B050U.001
Speaker Disassembly	M2*2L+4.2MM Ni	4	86.RY8N5.001

Removing the Top Case

1. Remove the 11 screws in the Bottom case.



Figure 3-21. Screws on Bottom Case

Table 3-8. Screws

Step	Screw	Quantity	Screw Type
Bottom Case Disassembly	M2*6 (red callout)	10	
	M2*3 Ni (green callout)	1	

2. Separate the top case from the bottom case.



Figure 3-22. Top Case

3. Turn the top case over. Lift up the top case, starting from the top edge.



Figure 3-23. Top Case

4. Disconnect the cable from the top case to Mainboard (FFC).
   a. Unlock the FFC
   b. Disconnect the cable.



Figure 3-24. Touchpad FFC & Keyboard FFC

5. Disconnect the FFC cable from touch pad.

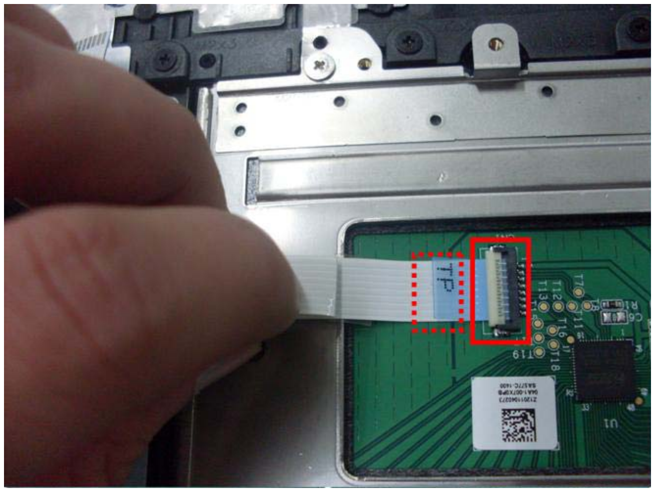


Figure 3-25. Touchpad module

＋ **IMPORTANT:**

Take care of the dotted line box to tear down the touch pad cable from the Touch pad.

6. Romve 4 screws from touch pad.

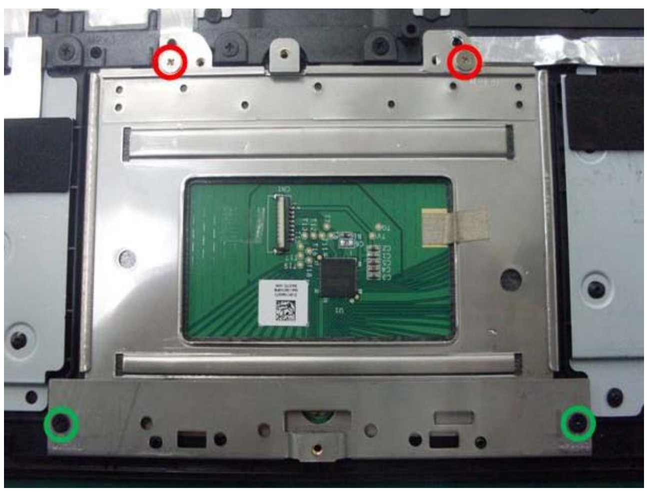


Figure 3-26. Touchpad module

Table 3-9. Screws

Step	Screw	Quantity	Screw Type
Touchpad Disassembly	M2*2 Ni(red callout)	2	
	M2*3 Ni (green callout)	2	

7. Lift the clickpad bracket and remove.

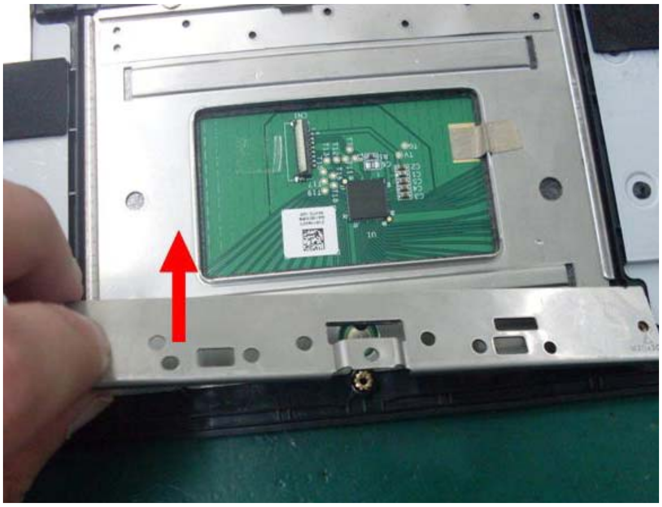


Figure 3-27. Touchpad module

8. Remove the touch pad.

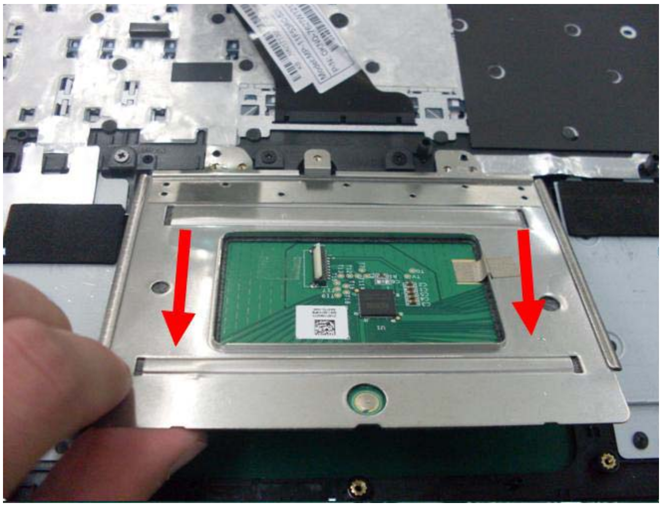


Figure 3-28. Touchpad module

9. Remove the AL foil on the keyboard.

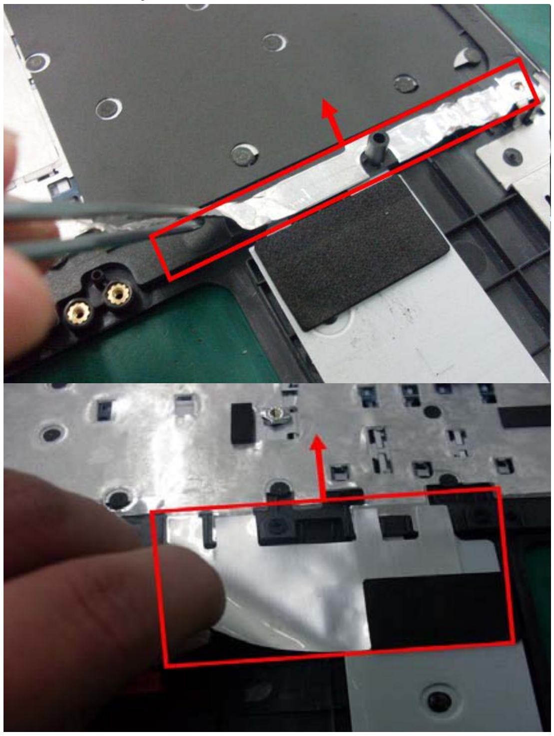


Figure 3-29. Keyboard module

10. Remove the 19 screws from the keyboard.

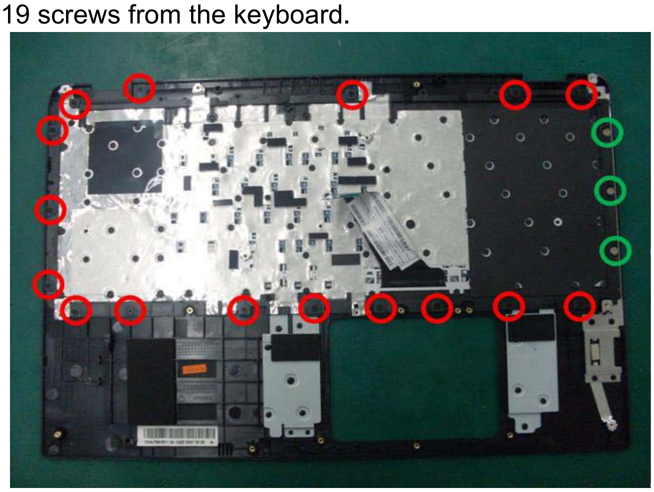


Figure 3-30. Keyboard module

Table 3-10. Screws

Step	Screw	Quantity	Screw Type
Keyboard Disassembly	M2*2 Ni(green callout)	3	
	M2*3 Ni (red callout)	16	

11. Remove the keyboard from the top case.

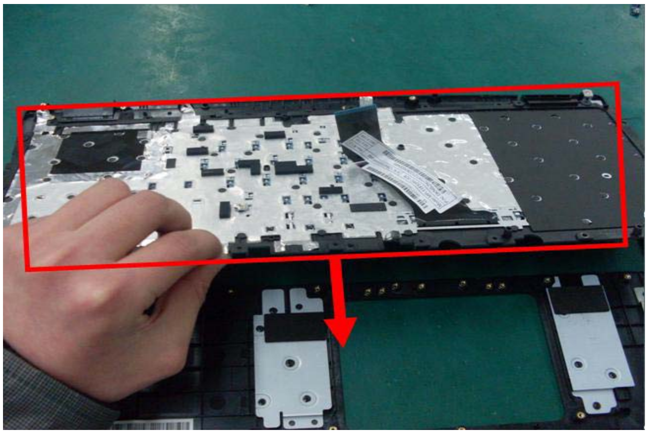


Figure 3-31. Keyboard module

Removing battery

1. Disconnect the battery cable from Mainboard.

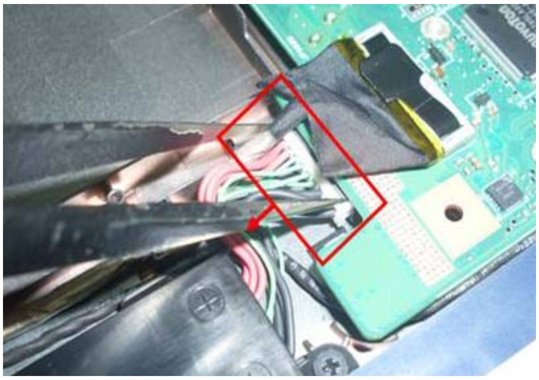


Figure 3-32. Battery cable

2. Lift the card reader cable from Mainboard,remove the SATA cable.

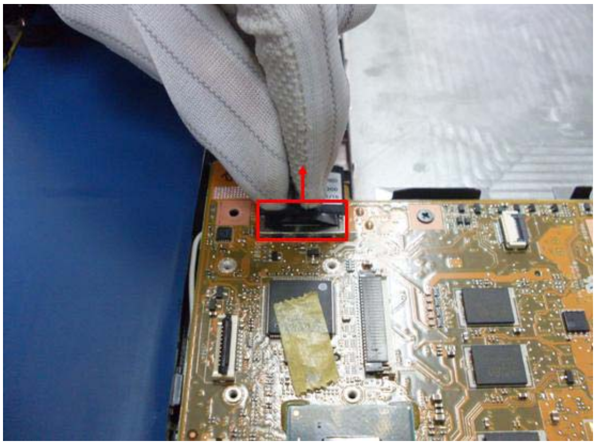


Figure 3-33. Card reader SATA cable

3. Lift the card reader cable from card reader and then remove.

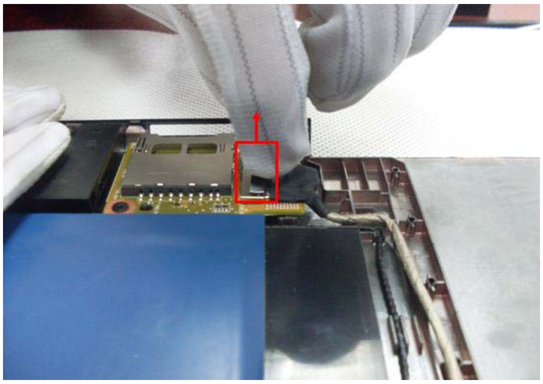


Figure 3-34. Card reader SATA cable

4. Release the locking latch for the power switch cable.
5. Remove the FFC cable.



Figure 3-35. Power switch Cable

6. Remove the screw from the battery and lift the power switch cable up from the battery.



Figure 3-36. Battery module

Table 3-11. Screws

Step	Screw	Quantity	Screw Type
Battery module Disassembly	M2*3Ni	1	

7. Lift the battery and remove it.



Figure 3-37. Battery module

Removing the Power switch board

1. Use a flat plastic tool to unlock the corner of the power switch board.

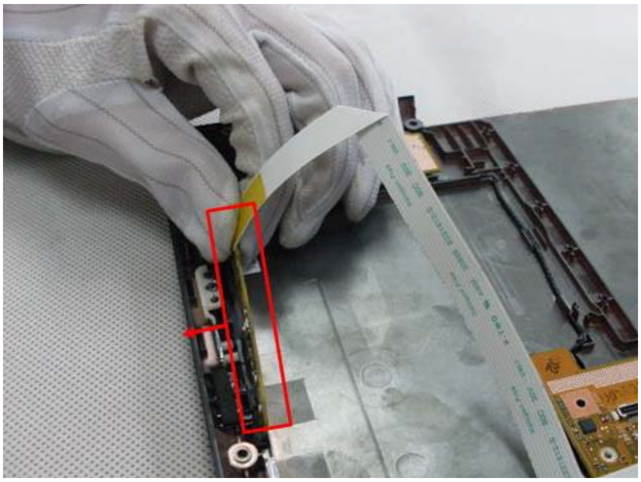


Figure 3-38. Power Switch Board

+ **IMPORTANT:**
Take care not to damage the FFC and power switch board during removal.

Remove the card reader

1. Remove the two screws from the card reader.

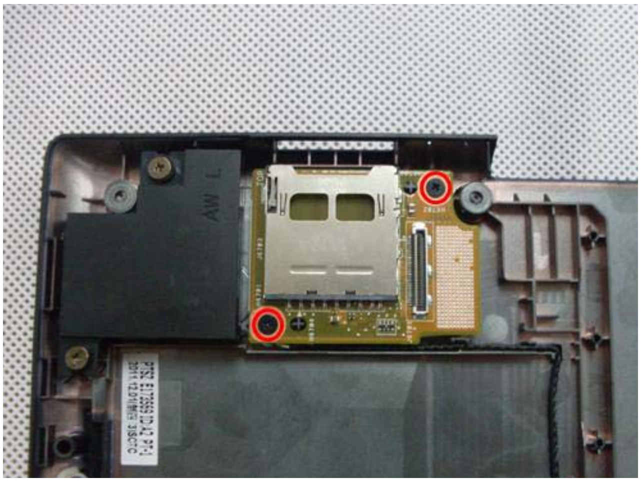


Figure 3-39. Card reader

Table 3-12. Screws

Step	Screw	Quantity	Screw Type
Carder reader Disassembly	M2*3	2	

2. Lift the card reader then remove.

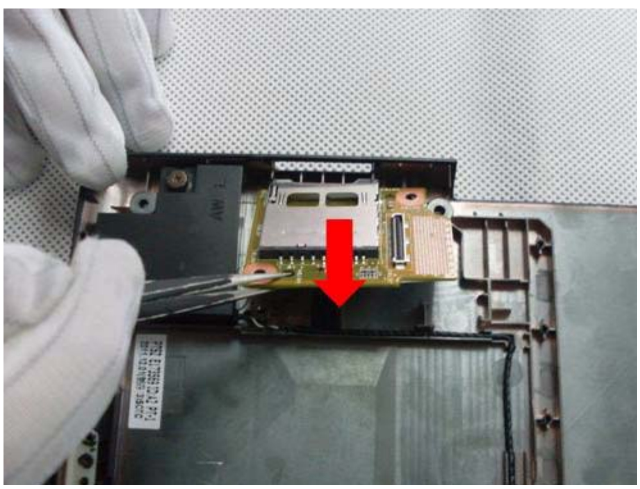


Figure 3-40. Card reader

Remove the cables from the Mainboard

1. Remove the HDD SATA cable from the Mainboard.

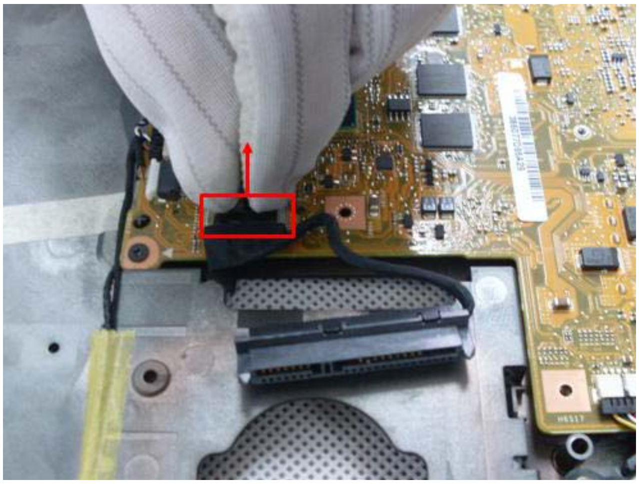


Figure 3-41. **HDD SATA cable**

2. Disconnect the speaker cable from the Mainboard.

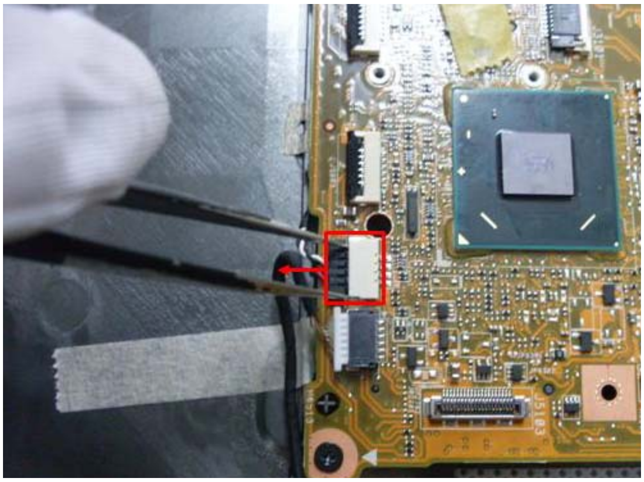


Figure 3-42. **Speaker cable**

3. Disconnect the bluetooth cable from Mainboard.

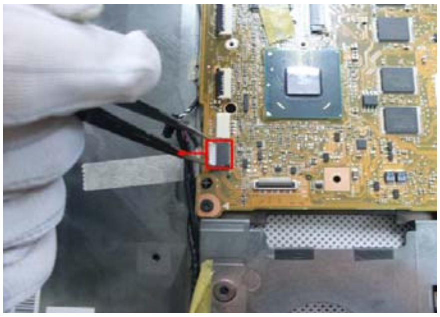


Figure 3-43. Bluetooth cable

4. Disconnect the LVDS cable from the Mainboard.



Figure 3-44. LVDS Cable

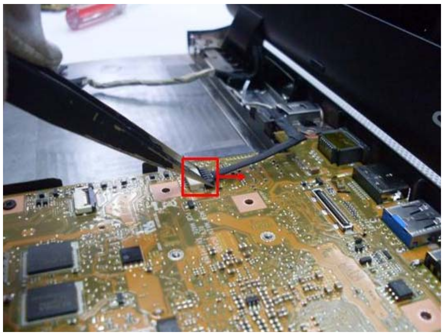


Figure 3-45. LVDS Cable

+ **IMPORTANT:**

Take care not to damage the cable during removal.

5. Remove the LCD module.

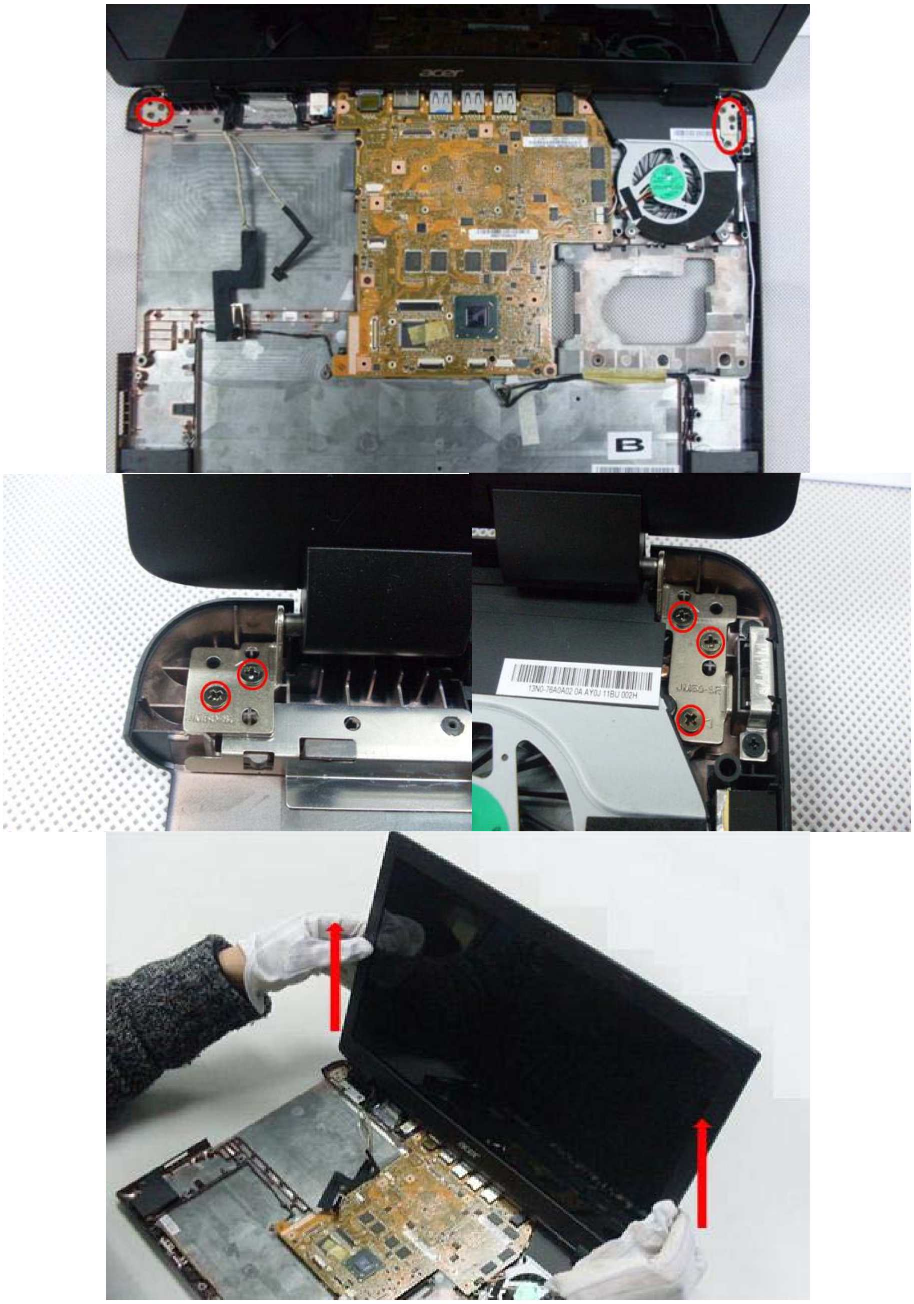


Figure 3-46. LCD module

Table 3-13. Screws

Step	Screw	Quantity	Screw Type
LCD module Disassembly	M2.5*5	5	

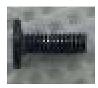
Removing the Mainboard

1. Remove the 7 screws from the Mainboard.



Figure 3-47. Mainboard

Table 3-14. Screws

Step	Screw	Quantity	Screw Type
Mainboard Disassembly	M2.5*5 Ni(green callout)	2	
	M2*3 Ni (red callout)	4	

2. Lift Mainboard from the bottom case and take it over.



Figure 3-48. Mainboard

3. Disconnect the DC-in cable(lift it up vertically) and then take it away.

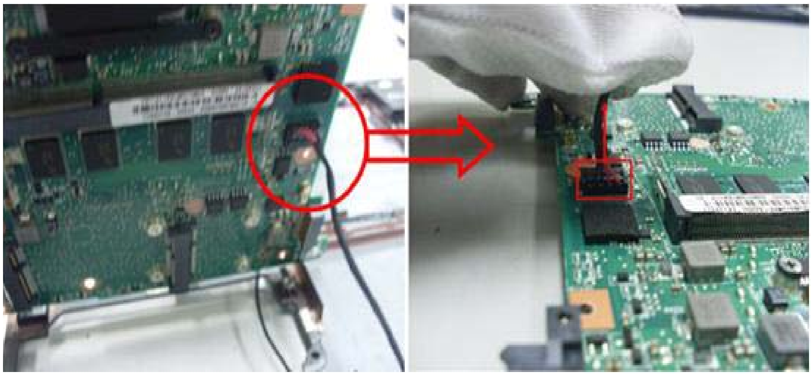


Figure 3-49. DC-in cable

4. Remove the DC-in bracket and then take it away.

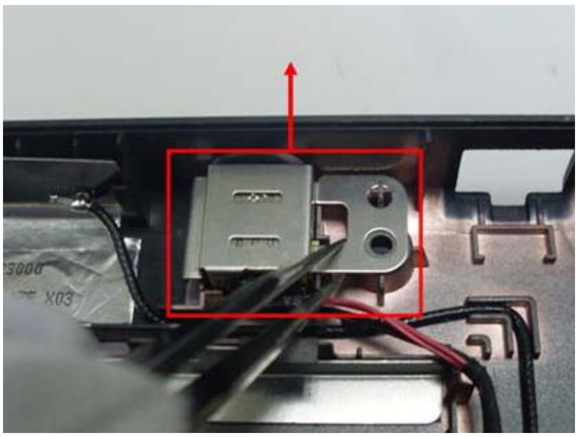


Figure 3-50. DC-in cable

5. Remove the DC-in connector and then take it away.

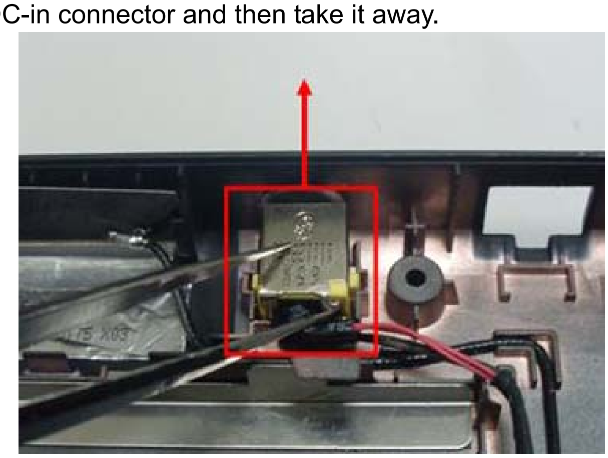


Figure 3-51. DC-in cable

Removing the Thermal module

1. Disconnect the cable of the fan from Mainboard.

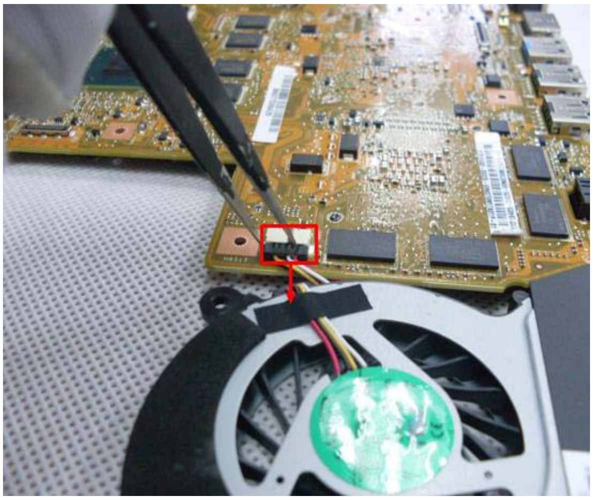


Figure 3-52. Thermal module

2. Remove 6 screws from the thermal module.

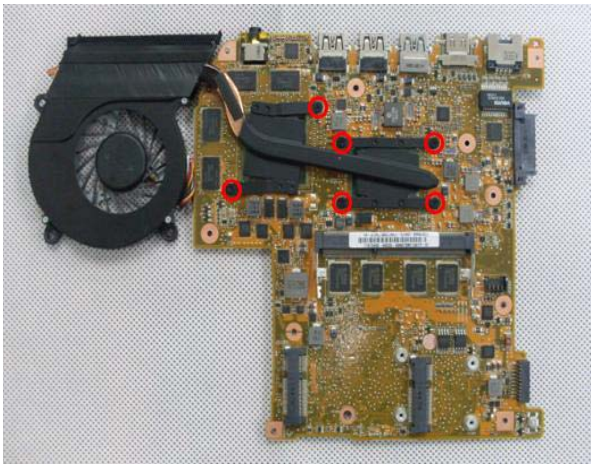


Figure 3-53. Thermal module

Table 3-15. Screws

Step	Screw	Quantity	Screw Type
Thermal module Disassembly	M2*3	6	

3. Lift the thermal module and take it away.

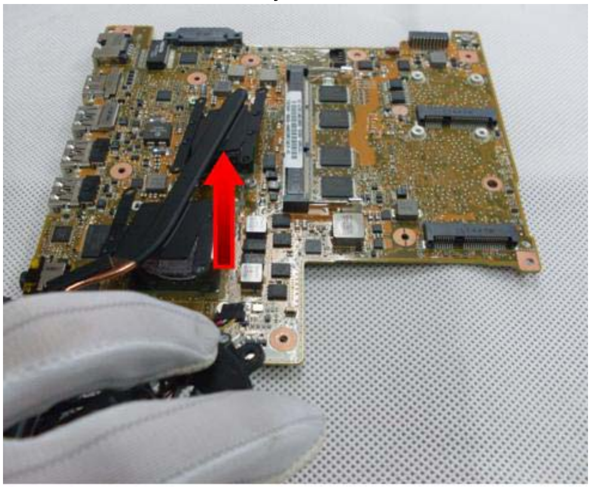


Figure 3-54. Thermal Module

Removing the Bluetooth Board

1. Lift the bluetooth and move it away.

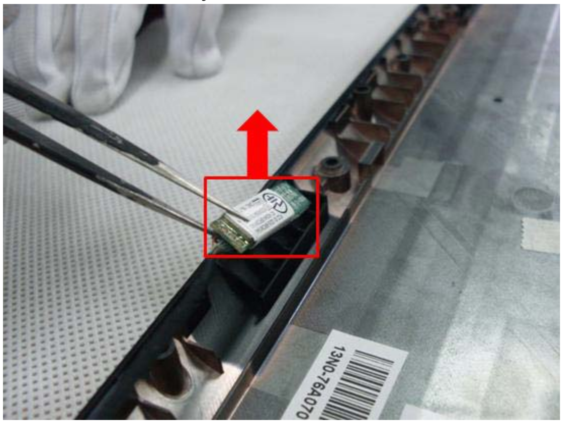


Figure 3-55. Bluetooth Board

Removing the Speakers

1. Remove the speaker.

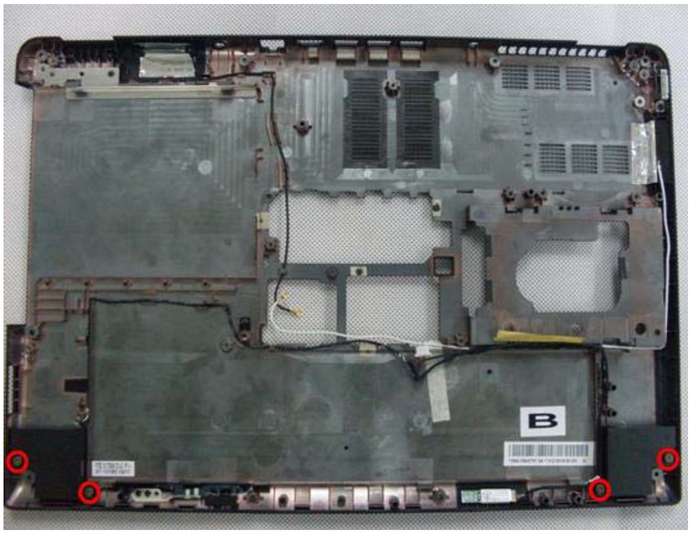


Figure 3-56. Speakers

2. Remove the 2 screws from the speakers.

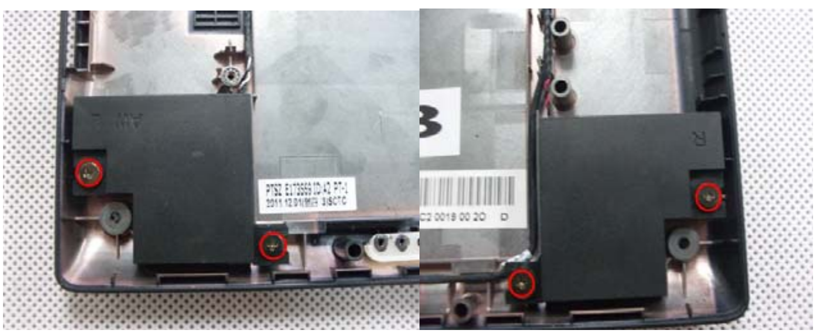


Figure 3-57. Speakers

Table 3-16. Screws

Step	Screw	Quantity	Screw Type
Speakers Disassembly	M2*2L+4.2MM Ni	4	

3. Remove the speakers and cable.

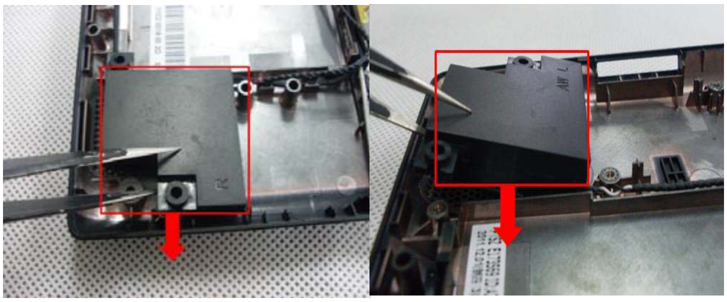


Figure 3-58. Speakers

LCD Module Disassembly Process

LCD Module Disassembly Flowchart

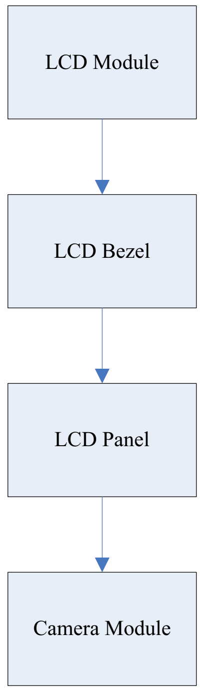


Figure 3-59. LCD Module Disassembly Flowchart

Table 3-17. Screws

Step	Screw	Quantity	Part No.
LCD Glass Panel Disassembly	M2*2.5	4	86.W750U.003

Removing the LCD Bezel

1. Disassembly sequence of LCD moudle, and then take off LCD bezel.

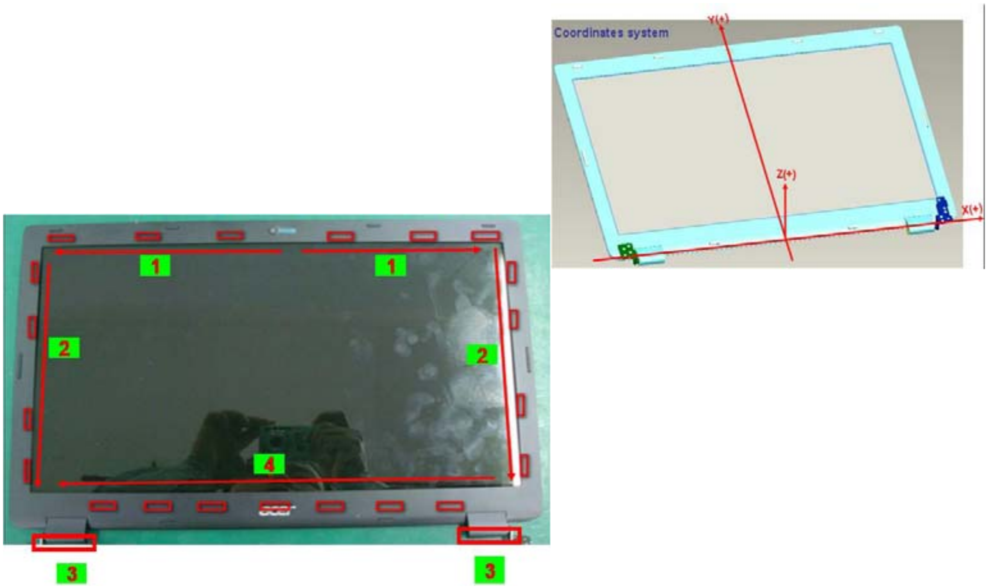


Figure 3-60. LCD Bezel

2. Hold the edge firmly. Apply force with thumb in +Z direction, and with the other 4 fingers in –Y direction.

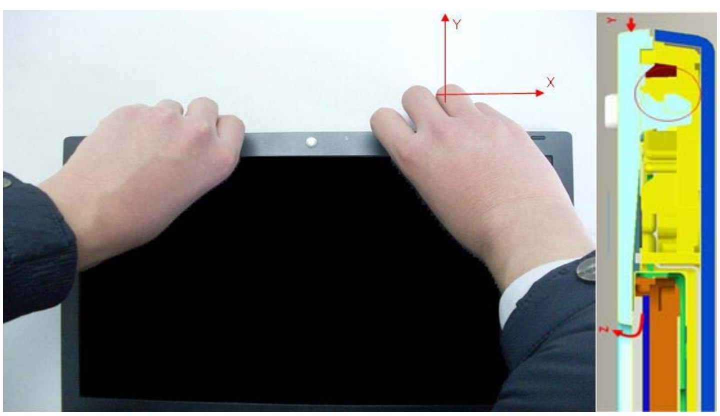


Figure 3-61. LCD Bezel

3. Hold firmly the right edge of LCD module. Apply force with thumb in +Z direction, and with the other 4 fingers in –X direction.



Figure 3-62.   LCD Bezel

4. Hold firmly the left edge of LCD module. Apply force with thumb in +Z direction, and with the other 4 fingers in +X direction.

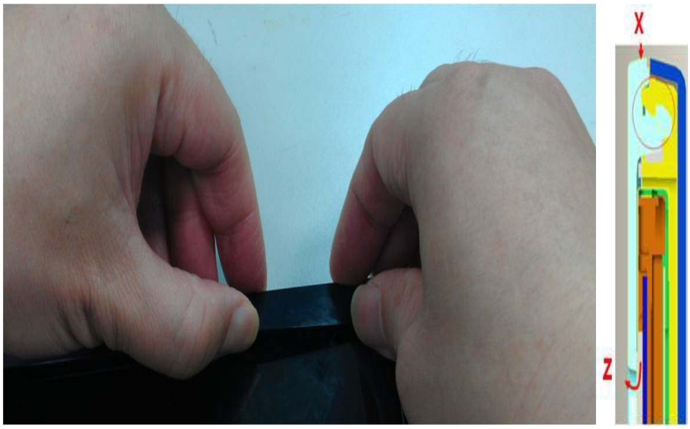


Figure 3-63.   LCD Bezel

5. Put the edge of thumb nail into the gap of both hinge cap plastic parts, and move the thumb nail back and forth in the direction shown below to disengage the latch.



Figure 3-64. LCD Bezel

6. Press center area of the bottom edge with left fingers, then push the edge of the hinge cap with thumb of the right hand in +Y direction, and apply force with index finger and middle finger in +Z direction.

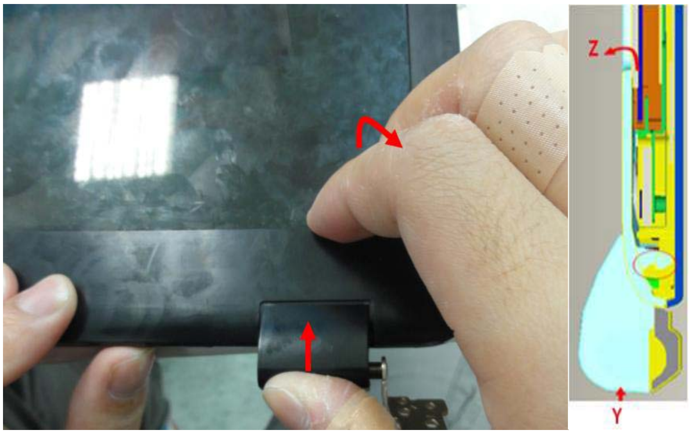


Figure 3-65. LCD Bezel

7. 3-2 Repeat 3-1 and disengage the latches one at a time, from right side all the way to the left.

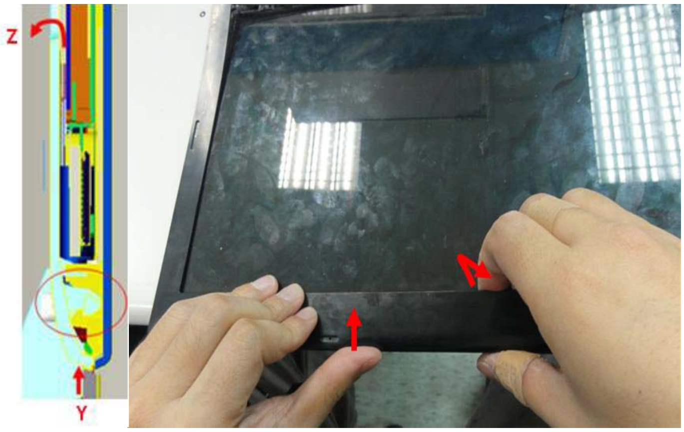


Figure 3-66. LCD Bezel

8. Take LCD bezel away.

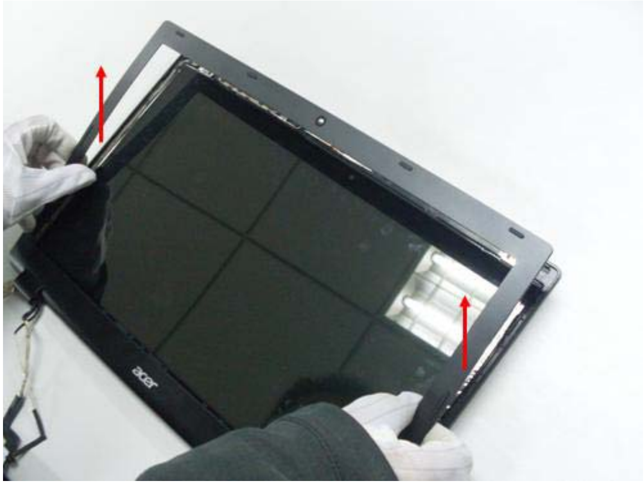


Figure 3-67. LCD Bezel

Removing the LCD Panel

1. Remove the LCD panel.



Figure 3-68. LCD Panel

2. Remove the 4 screws on the LCD panel.

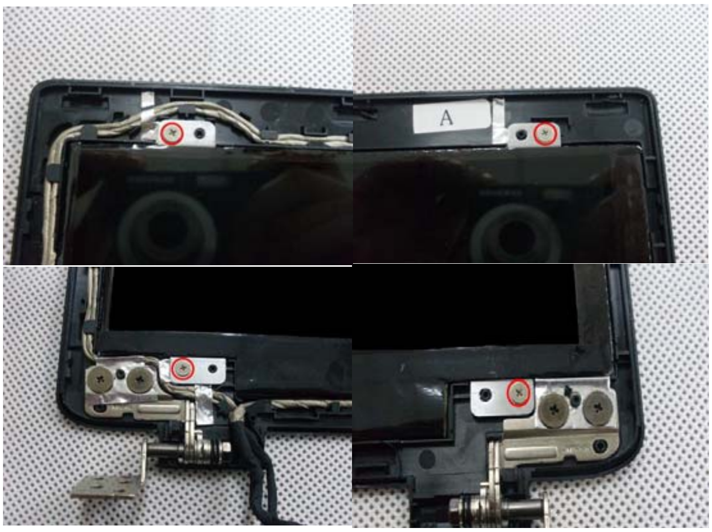


Figure 3-69. LCD Pane

+ **IMPORTANT:**
Do not remove the screws on the hinge&LCD cover.

Table 3-18. Screws

Step	Screw	Quantity	Screw Type
LCD Panel Disassembly	M2*2.5	4	

3. Lift the LCD panel out of the module.

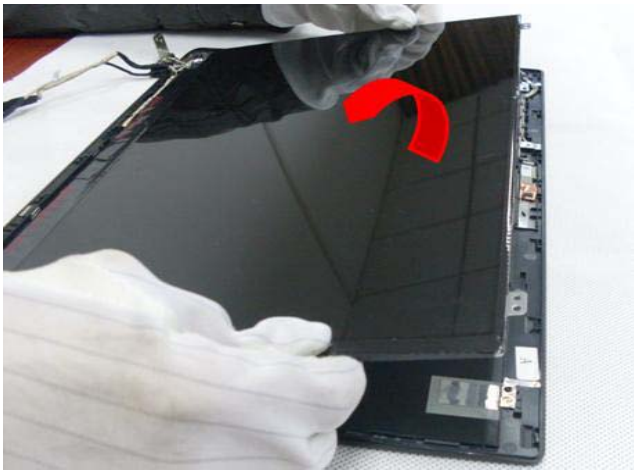


Figure 3-70. LCD Panel

⚠ CAUTION:

To avoid damage, make sure all cables near the hinge are free and clear to move.

4. Turn the LCD panel over, then disconnect the LVDS cable.



Figure 3-71. LCD Panel

Removing the Camera Board

1. Disconnect the camera cable.

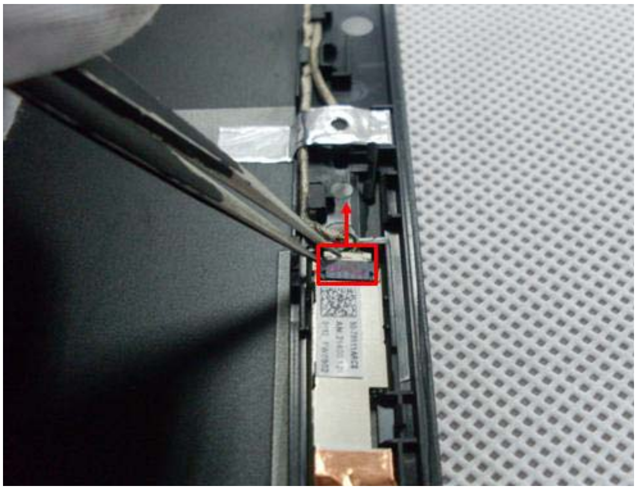


Figure 3-72. Camera Board

2. Pry the camera board away from the module.

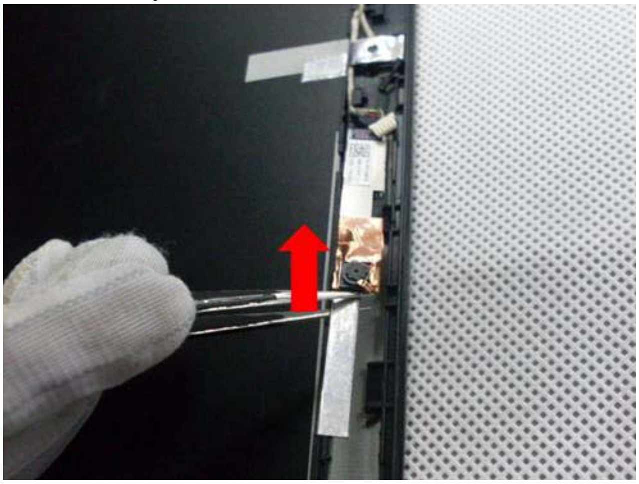


Figure 3-73. Camera Board

LCD Reassembly Procedure

Replacing the Camera

1. Place the camera on the LCD cover.

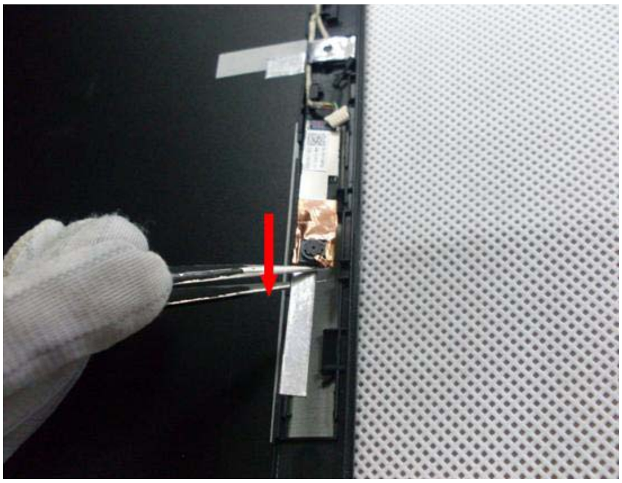


Figure 3-74. Camera

2. Connect the LVDS cable to the camera module.

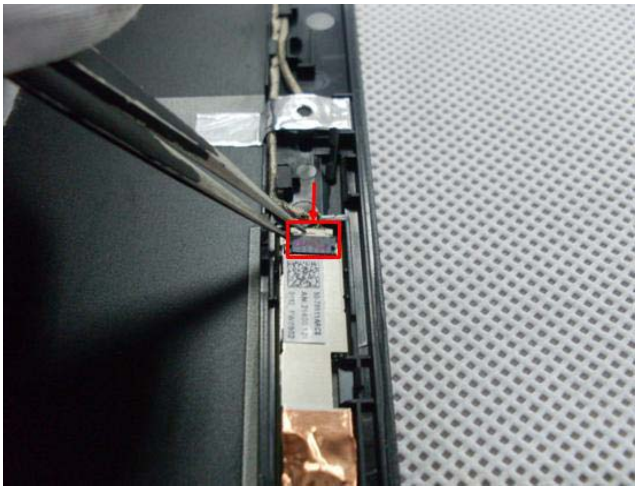


Figure 3-75. Camera

Replacing the LCD Panel

1. Connect the LVDS cable to the panel and bond the mylar to secure the connector.

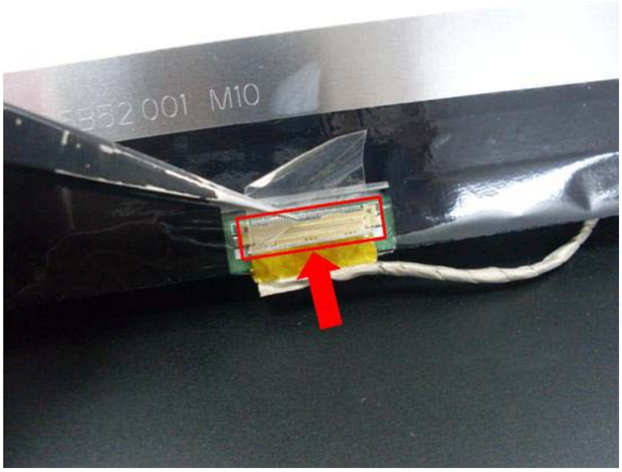


Figure 3-76. LCD Panel

2. Place the LCD panel on the LCD cover.



Figure 3-77. LCD Panel

⚠ **CAUTION:**

To avoid damage, make sure all cables near the hinge are free and clear to move.

3. Secure the 4 screws on the LCD panel.



Figure 3-78. LCD Panel

Table 3-19. Screws

Step	Screw	Quantity	Screw Type
LCD Panel Assembly	M2*2.5	4	

Replacing the LCD Bezel

1. Place the bezel onto the LCD module.



Figure 3-79. LCD Bezel



Figure 3-80. LCD Bezel

Replacing the Bluetooth

1. Place the Bluetooth into the socket.

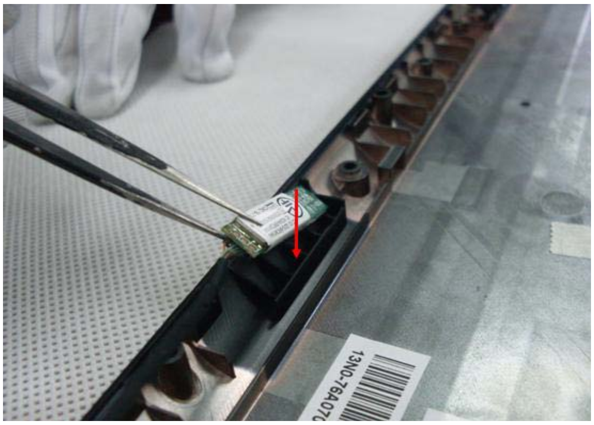


Figure 3-81. Bluetooth

Replacing the Speakers

1. Place the left speaker assembly into the bottom case.

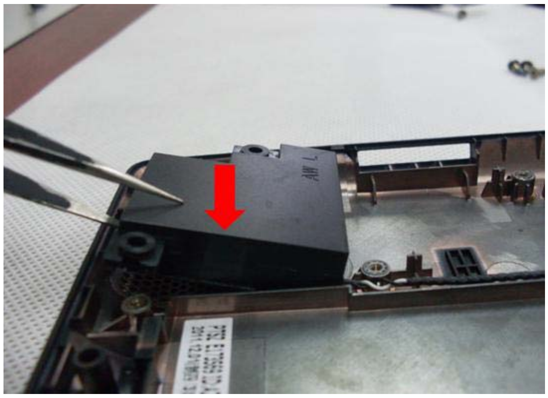


Figure 3-82. Speakers

2. Secure 2 screws to the left speaker.

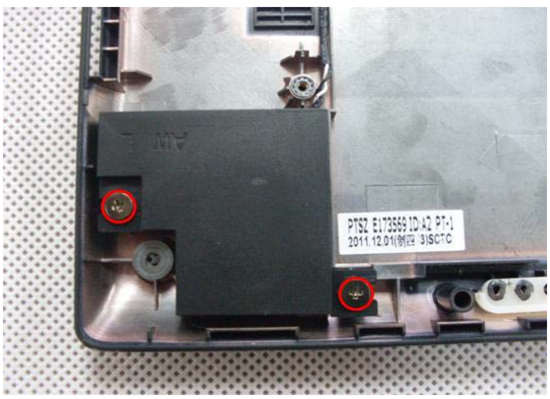


Figure 3-83. Speakers

Table 3-20. Screws

Step	Screw	Quantity	Screw Type
Speaker Assembly	M2*2L+4.2MM Ni	2	

3. Place the right speaker into the bottom case.

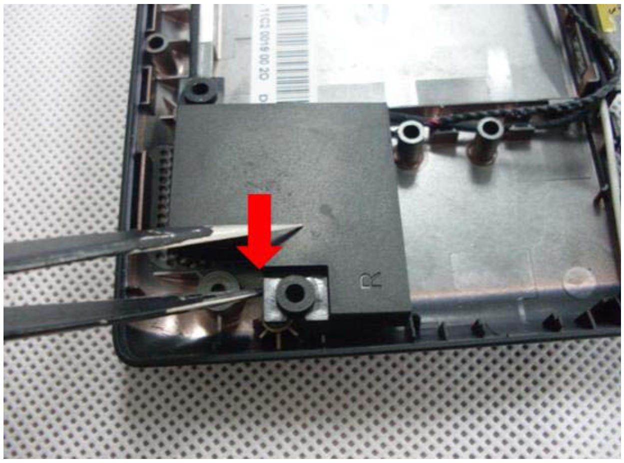


Figure 3-84. Speakers

4. Secure 2 screws to the right speaker.

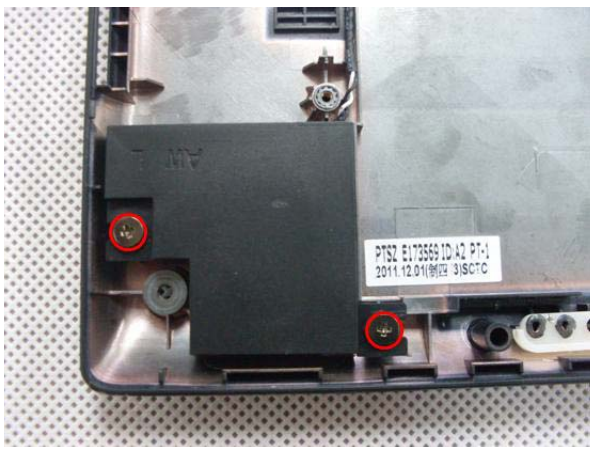


Figure 3-85. Speakers

Table 3-21. Screws

Step	Screw	Quantity	Screw Type.
Speaker Assembly	M2*2L+4.2MM Ni	2	

Replacing the DC-IN cable

1. Place the DC-in cable into the bottom case,and place the cable in the cable clip.

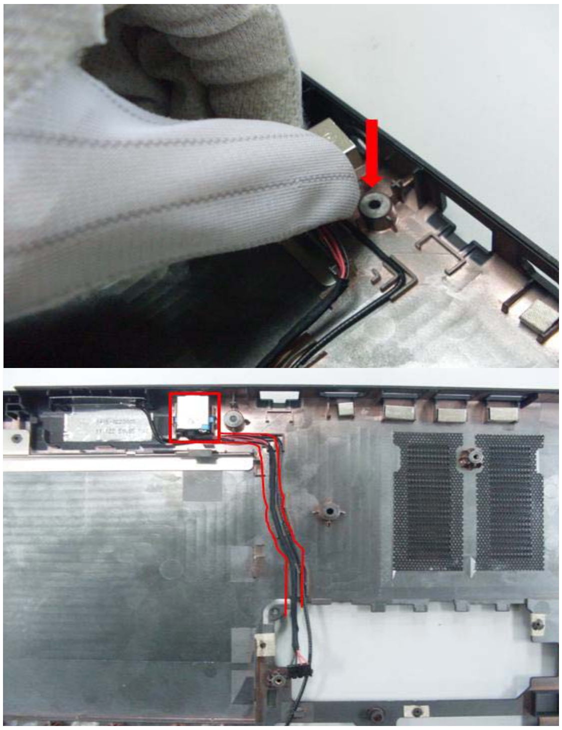


Figure 3-86. DC-in cable

2. Place the DC-in bracket on the DC-in connector.

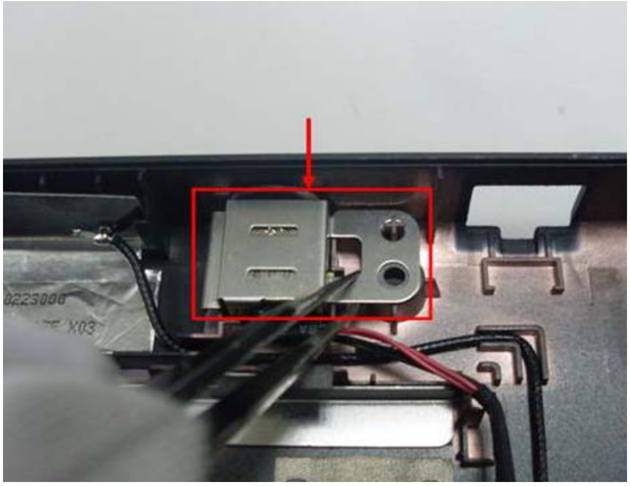


Figure 3-87. DC-in cable

Replacing the Thermal Module

+ **IMPORTANT:**

Apply a suitable thermal grease and ensure all heat pads are in place before replacing the thermal module.

The following thermal grease types are approved for use:

- **N302 I-Connosseur**
- **Honeywell**

The following thermal pads are approved for use:

- **Eapus XR-PE**

1. Align the screw holes on the thermal module and mainboard then replace the module. Keep the module as level as possible to spread the thermal grease evenly.

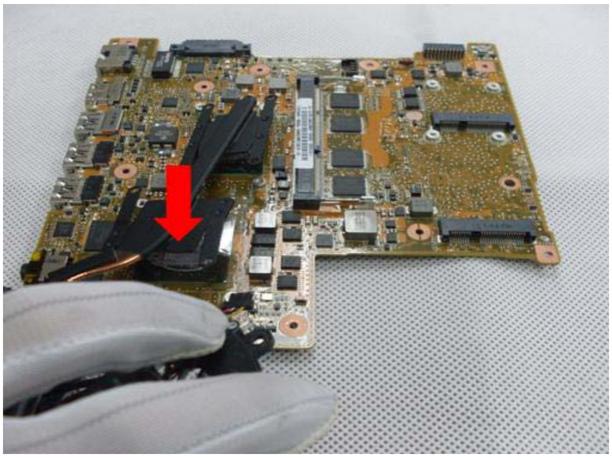


Figure 3-88. Thermal Module

2. Replace the 6 screws to secure the thermal module in place.

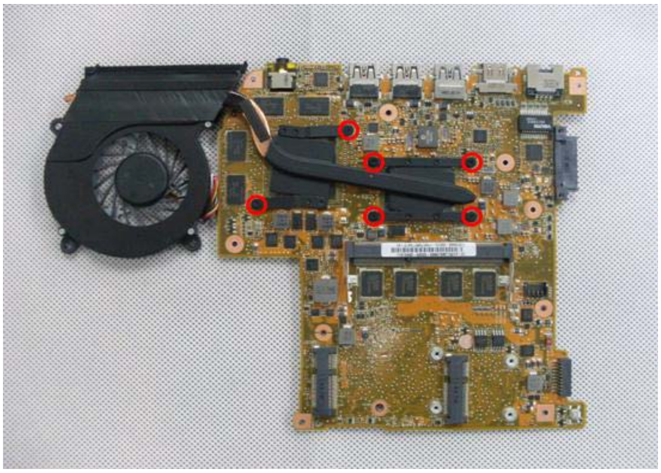


Figure 3-89. Thermal Module

Table 3-22. Screws

Step	Screw	Quantity	Screw Type.
Thermal module Disassembly	M2*3 Ni	6	

3. Connect the fan cable to the mainboard.

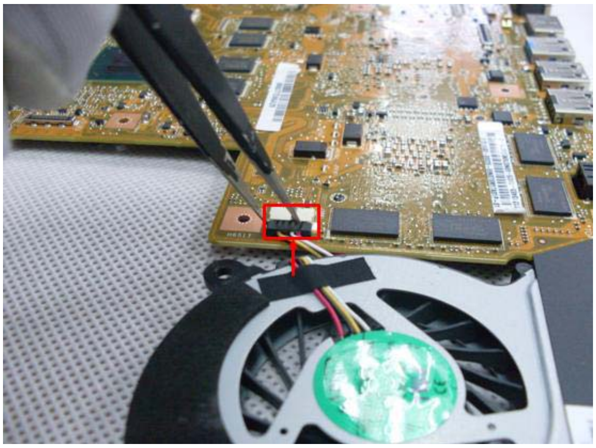


Figure 3-90. Thermal Module

Replacing the Mainboard

1. Slide the main board external connector edge in first to the bottom case, then lower into place.

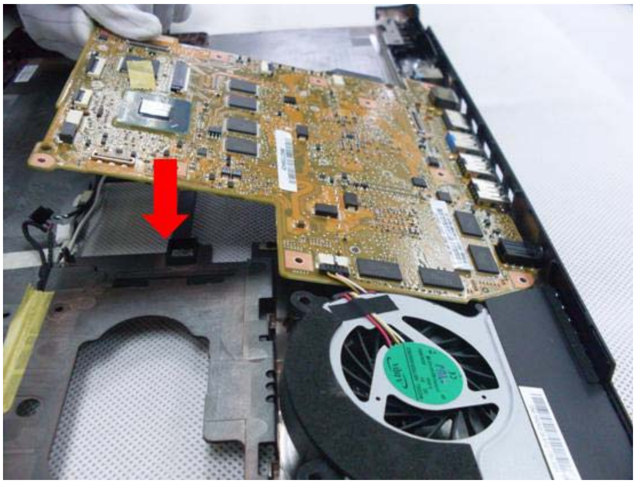


Figure 3-91. Main board

2. Replace 7 screws on the mainboard.

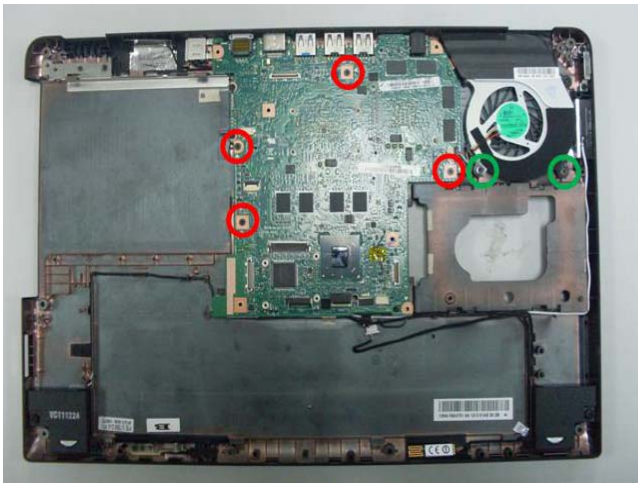
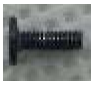


Figure 3-92. Mainboard

Table 3-23. Screws

Step	Screw	Quantity	Screw Type
Mainboard Disassembly	M2.5*5 Ni(green callout)	2	
	M2*3 Ni (red callout)	4	

Replacing the LCD Module & Cables to Mainboard

1. Place the LCD module onto the bottom case.
2. Secure the 5 securing screws to the lower cover.

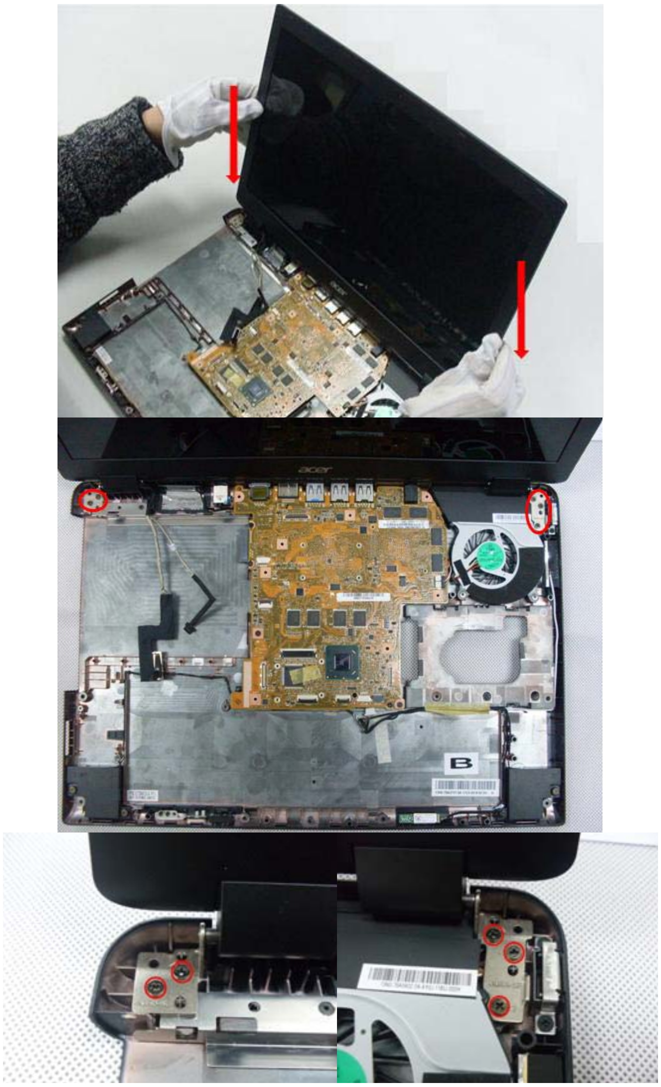


Figure 3-93. LCD Module

Table 3-24. Screws

Step	Size	Quantity	Screw Type
LCD Module Assembly	M2.5*5	5	

3. Connect the LVDS cable to the mainboard.

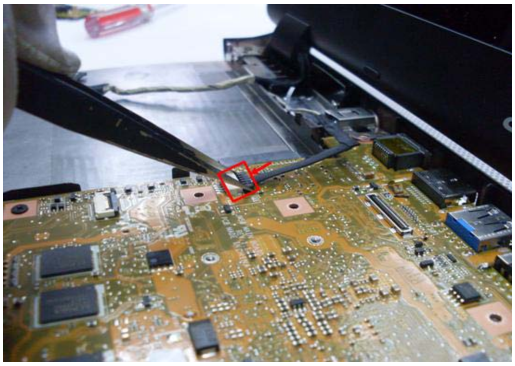


Figure 3-94. LVDS Cable



Figure 3-95. LVDS Cables

4. Connect the bluetooth cable to the main board.

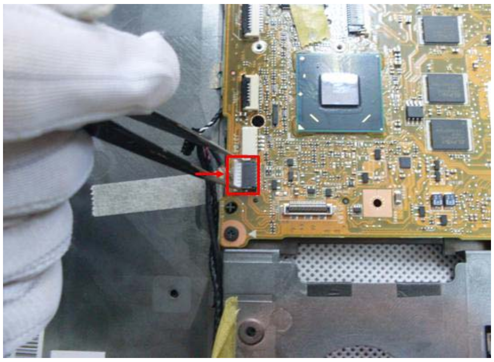


Figure 3-96. Bluetooth cable

5. Connect the Speaker cable to the mainboard.

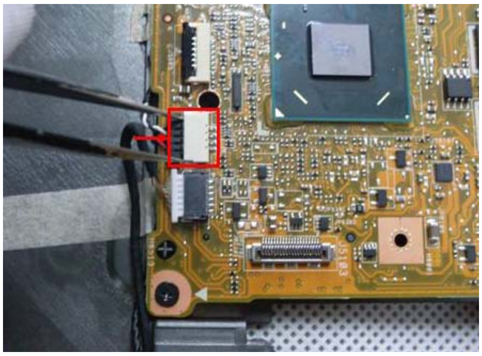


Figure 3-97. Speaker cable

6. Connect the HDD cable to the mainboard.

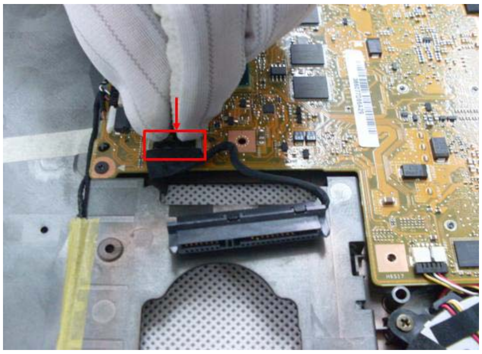


Figure 3-98. HDD SATA Cable

Replacing the Card reader

1. Place the card reader board in the bottom case.

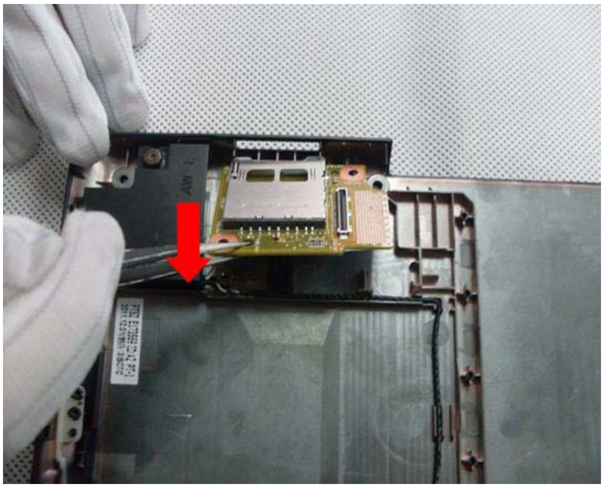


Figure 3-99. card reader

2. Secure the 2 screws on the card reader.



Figure 3-100. Card reader

Table 3-25. Screws

Step	Screw	Quantity	Screw Type
Carder reader Assembly	M2*3	2	

Replacing the Power Switch board&Battery

1. Secure the locking latch for the power switch board.

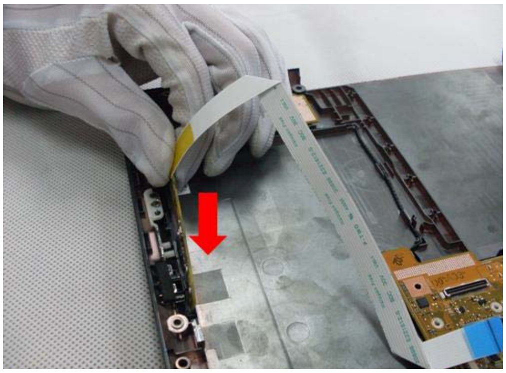


Figure 3-101. Power switch board

2. Place the battery into the bottom case.



Figure 3-102. Battery

3. Secure the screw on battery.



Figure 3-103. Battery

Table 3-26. Screws

Step	Screw	Quantity	Screw Type
Battery module Disassembly	M2*3Ni	1	

4. Connect the card reader cable on card reader.

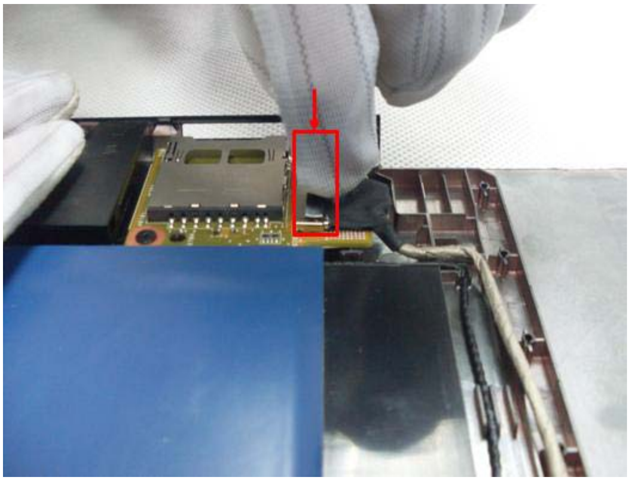


Figure 3-104. Card reader cable

5. Connect the card reader cable on main board.

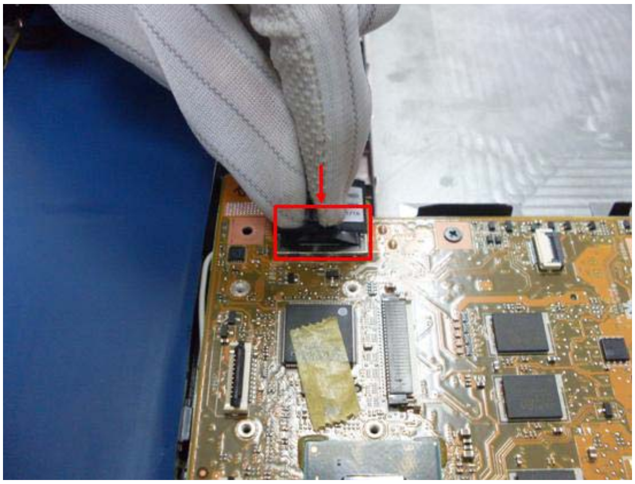


Figure 3-105. Card reader cable

6. Connect the power switch cable on the main board.

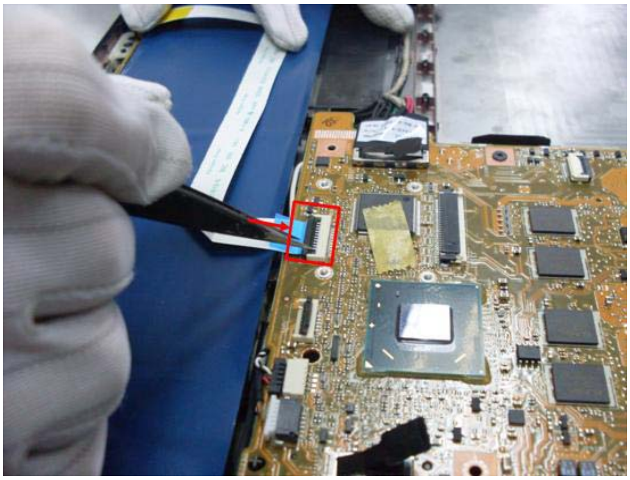


Figure 3-106. Power switch cable

7. Connect the Battery cable to the main board.



Figure 3-107. Battery cable

Replacing the Keyboard

1. Place the keyboard on the top case as below picture shows.

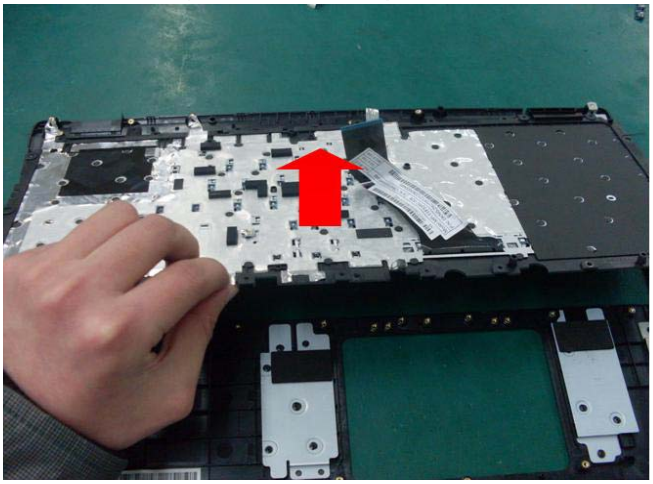


Figure 3-108. Keyboard

2. Secure the 17 screws on the keyboard.

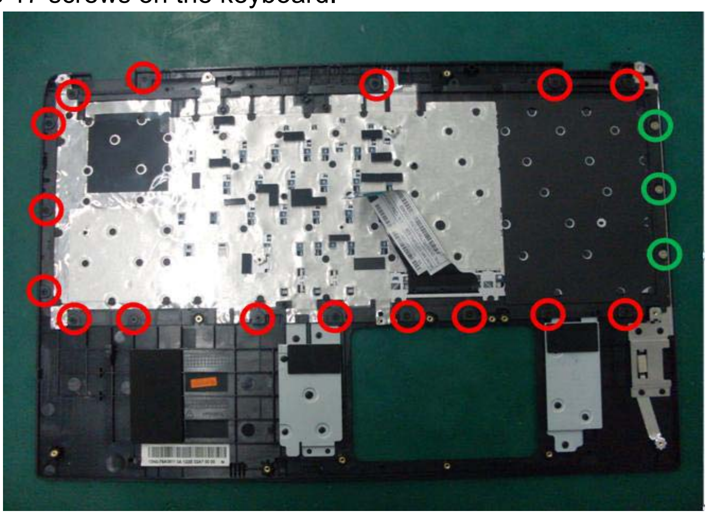


Figure 3-109. Keyboard module

Table 3-27. Screws

Step	Screw	Quantity	Screw Type
Keyboard Disassembly	M2*2 Ni(green callout)	3	
	M2*3 Ni (red callout)	16	

3. Place the AL foil on the keyboard.

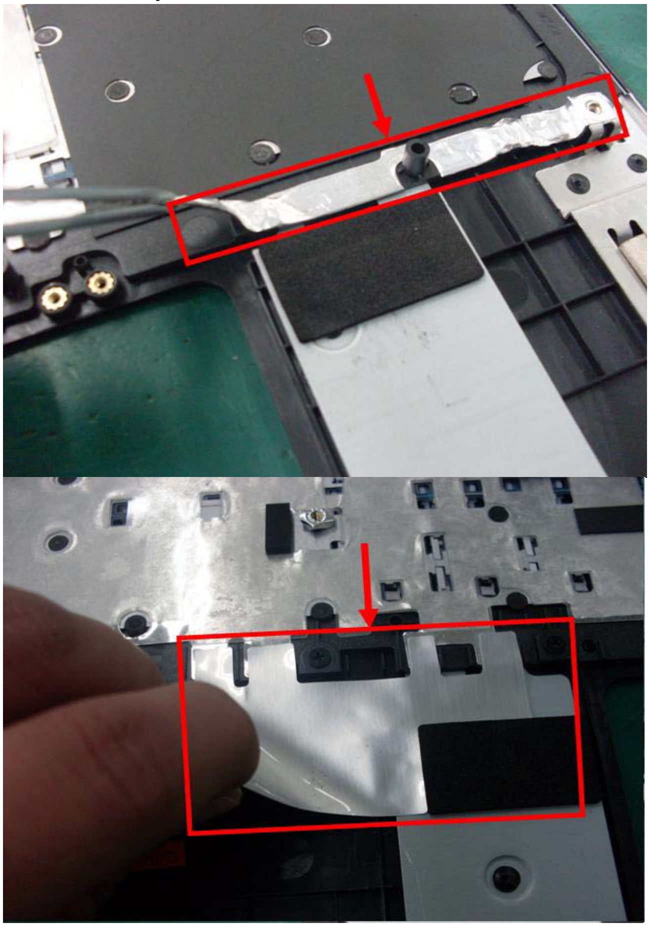


Figure 3-110. Keyboard

4. Place the touch pad on the top case.

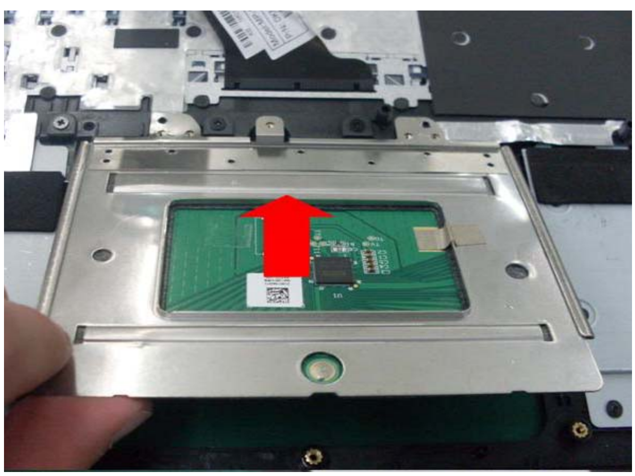


Figure 3-111. Touch pad module

5. Replace the click pad bracket on the touch pad.

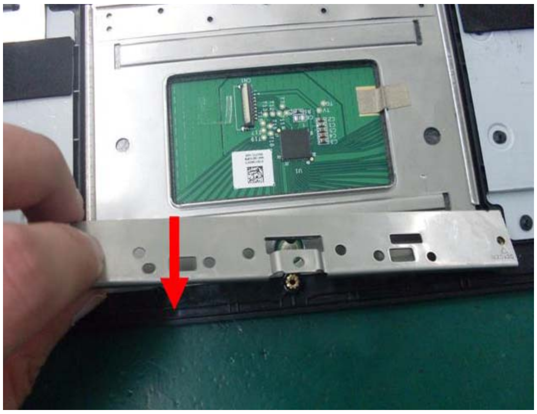


Figure 3-112. Click pad bracket

6. Secrue the 4screws on the touch pad.

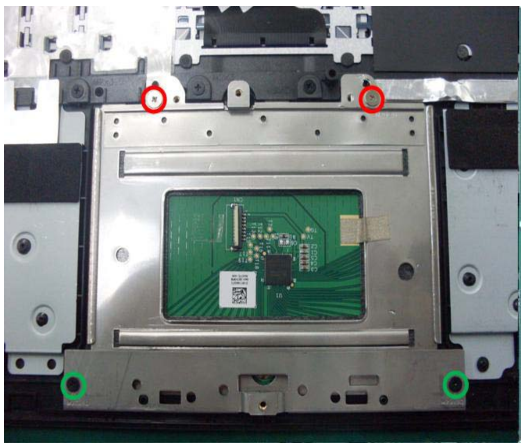


Figure 3-113. Touch pad module

Table 3-28. Screws

Step	Screw	Quantity	Screw Type
Touchpad Disassembly	M2*2 Ni(red callout)	2	
	M2*3 Ni (green callout)	2	

7. Connect the touch pad cable with the touch pad.

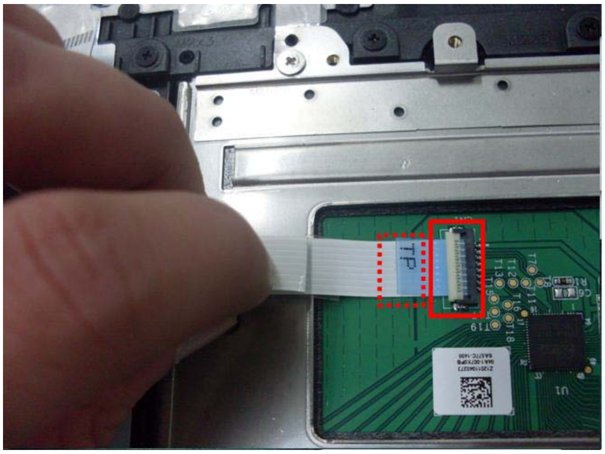


Figure 3-114. Touch pad FFC cable

8. Connect the keyboard FFC cable on the main board.



Figure 3-115. Keyboard FFC Cable

9. Connect the touch pad cable on the main board.

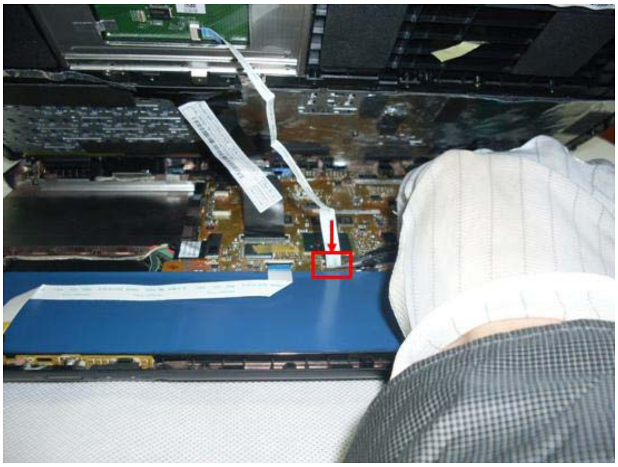


Figure 3-116. Touch Pad Cable

10. Turn over the top case and install the top case to bottom case.

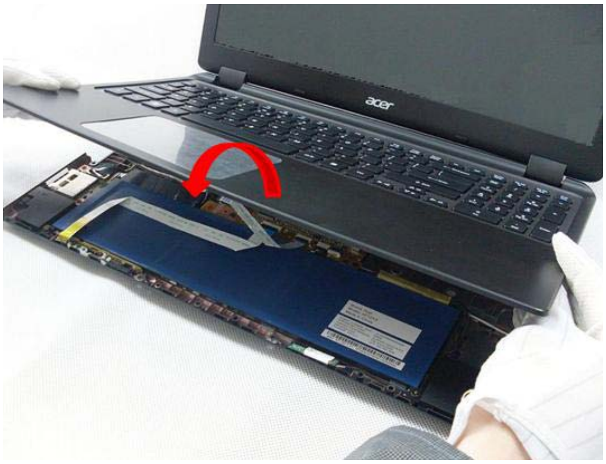


Figure 3-117. Top case

11. Secure the 11 screws in the bottom case.



Figure 3-118. Bottom case

Table 3-29. Screws

Step	Screw	Quantity	Screw Type
Bottom Case Disassembly	M2*6 (red callout)	10	
	M2*3 Ni (green callout)	1	

Replacing the ODD Module

1. Replace the ODD bezel.



Figure 3-119. ODD Module

2. Replace the ODD bracket.

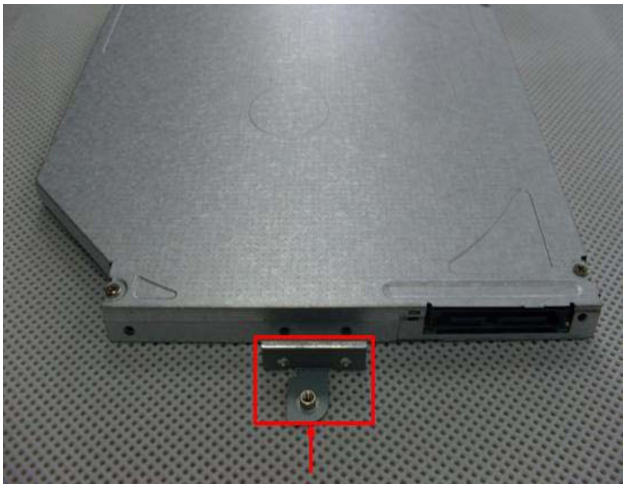


Figure 3-120. ODD Module

3. Replace the 2 screws of the ODD bracket.



Figure 3-121. ODD Bracket

Table 3-30. Screws

Step	Screw	Quantity	Screw Type
ODD Bracket Assembly	M2*2.5	2	

4. Push the ODD completely into the bay until flush with the bottom case.



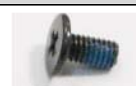
Figure 3-122. ODD Module

5. Replace the screw to secure the ODD module.



Figure 3-123. ODD Module

Table 3-31. Screw

Step	Screw	Quantity	Screw Type
ODD Module Assembly	M2*3	1	

Replacing the WLAN Module

1. Insert the WLAN module into the connector.



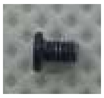
Figure 3-124. WLAN Module

2. Replace the screw on the WLAN module.



Figure 3-125. WLAN Module

Table 3-32. Screws

Step	Screw	Quantity	Screw Type
WLAN Module Assembly	M2*3 Ni	1	

3. Connect the WLAN antenna cables.



Figure 3-126. WLAN Module

+ **IMPORTANT:**

Note the position of the Main (black) and Auxiliary (white) connectors.

Replacing the SSD Module

1. Insert the SSD module into the connector.



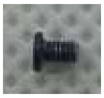
Figure 3-127. SSD Module

2. Replace the screw on the SSD module.



Figure 3-128. SSD Module

Table 3-33. Screws

Step	Screw	Quantity	Screw Type
SSD Module Assembly	M2*3 Ni	1	

Replacing the DIMM Module

1. Slide the DIMM modules into the mainboard connectors.



Figure 3-129. DIMM Module

2. Press down until the locking springs click into place.

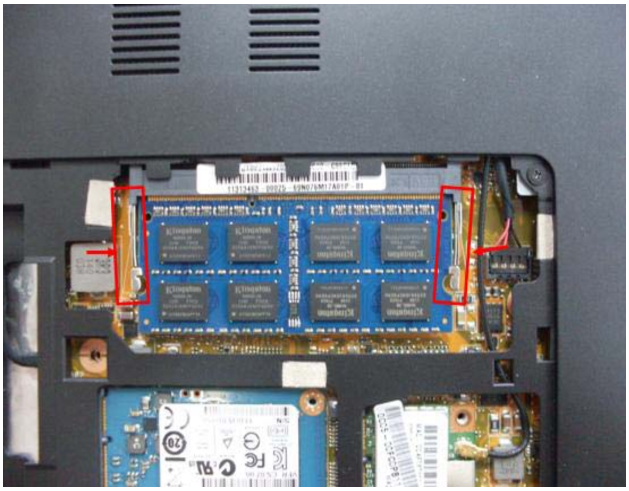


Figure 3-130. DIMM Module

Replacing the HDD Module

1. Connect the HDD to the HDD SATA cable.

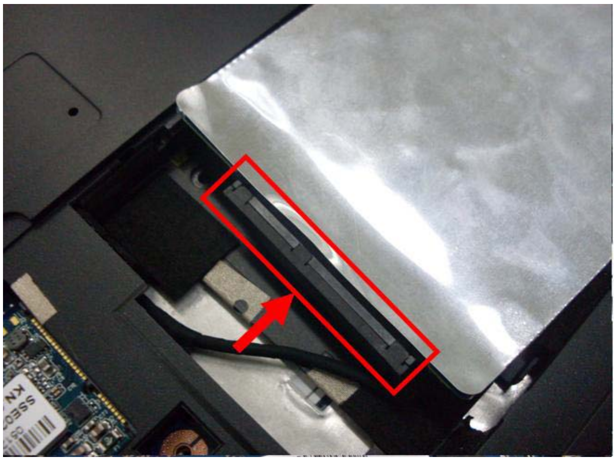


Figure 3-131. HDD module

2. Hold the tab and slide the HDD firmly into the docking.



Figure 3-132. HDD module

Replacing the Door

1. Insert the HDD door edge flanges into the slots.



Figure 3-133. HDD Door

2. Replace the 3 screws.



Figure 3-134. HDD Door Screws

Replacing the Dummy Card

1. Insert the Dummy card in until it clicks into place.



Figure 3-135. Dummy Card

CHAPTER 4

Troubleshooting

Troubleshooting

Introduction

This chapter contains information about troubleshooting common problems associated with the notebook.

General Information

The following procedures are a guide for troubleshooting computer problems. The step by step procedures are designed to be performed as described.

NOTE:

The diagnostic tests are intended for Acer products only. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.

1. Obtain as much detailed information as possible about the problem.
2. If possible, verify the symptoms by re-creating the failure through diagnostic tests or repeating the operation that led to the problem.
3. Use Table 4-1 with the verified symptom to determine the solution.

Table 4-1. Common Problems

Symptoms (Verified)
Power On Issues
No Display Issues
LCD Failure
Keyboard Failure
Touchpad Failure
Internal & External Speaker Failure
Microphone Failure
USB Failure
WLAN Failure
Card Reader Failure
Thermal Unit Failure
HDMI and CRT Failure
CD-ROM/DVD Failure
Other Functions Failure
Intermittent Problems
Undetermined Problems

4. If the Issue is still not resolved, refer to Online Support Information.

Power On Issues

If the system does not power on, perform the following, one at a time, to correct the problem. Do not replace a non-defective FRU:

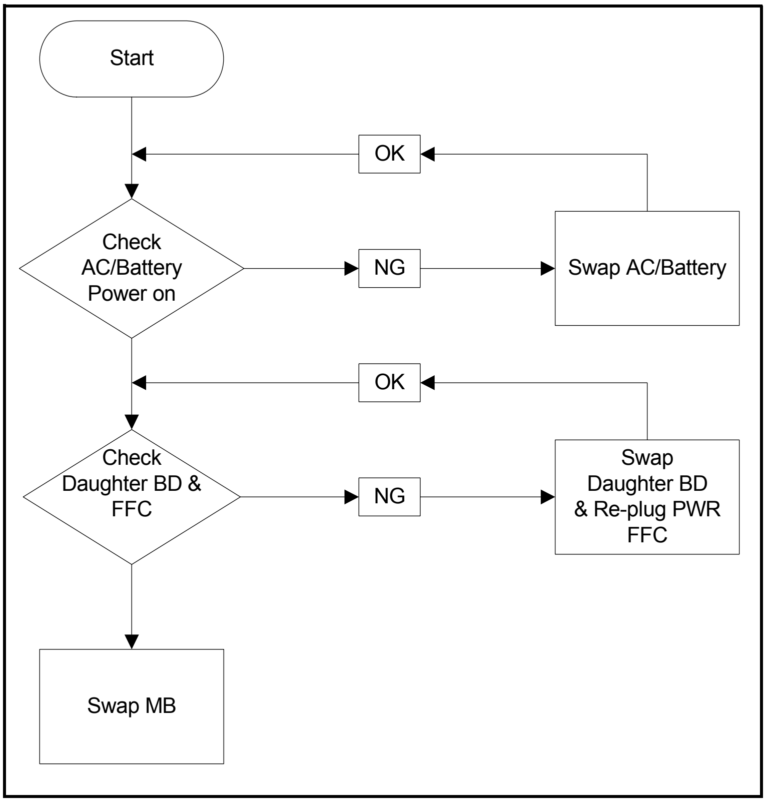


Figure 4-1. Power On Issue

Please wait for 3 min. after removing all power (AC adapter and Battery), then re-insert to try power on.

Computer Shuts Down Intermittently

If the system powers off at intervals, perform the following.

1. Makes sure the power cable is properly connected to the computer and the electrical outlet.
2. Remove all extension cables between the computer and the outlet.
3. Remove all surge protectors between the computer and the electrical outlet. Plug the computer directly into a known serviceable electrical outlet.
4. Disconnect the power and open the casing to check the Thermal Unit (refer to Thermal Unit Failure) and fan airways are free of obstructions.
5. Remove all external and non-essential hardware connected to the computer that are not necessary to boot the computer to the failure point.
6. Remove any recently installed software.
7. If the Issue is still not resolved, refer to Online Support Information.

No Display Issues

If the Display does not work, perform the following, one at a time. Do not replace a non-defective FRU:

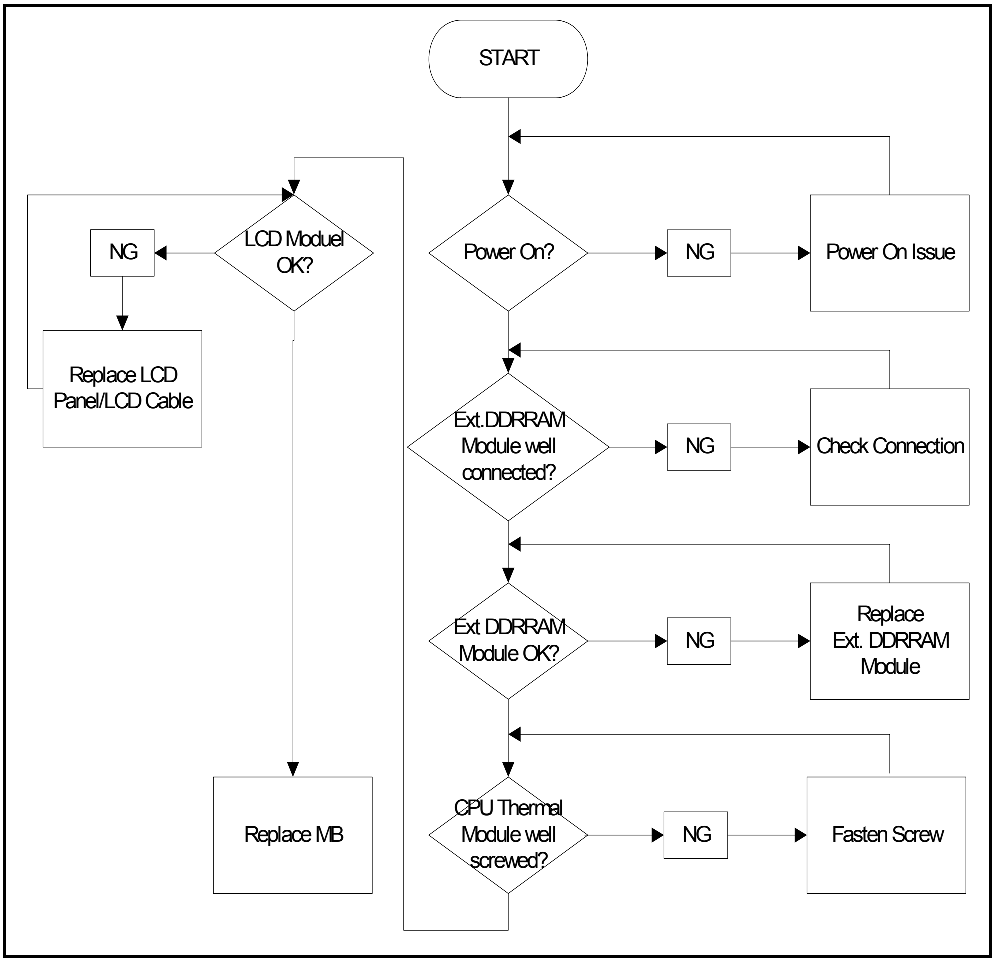


Figure 4-2. No Display Issue

No POST or Video

If the POST or video does not appear, perform the following, one at a time.

1. Make sure that internal display is selected. Switching between internal and external by pressing ***Fn+F5***. Reference Product pages for specific model procedures.
2. Make sure the computer has power by checking for one of the following:
   - Fans start up
   - Status LEDs illuminate

   If no power, refer to *Power On Issues*.
3. Drain stored power by removing the power cable and battery. Hold the power button for 10 seconds.
4. Connect the power and reboot the computer.

5. Connect an external monitor to the computer and switch between the internal display and the external display is by pressing ***Fn+F5***.
6. If the POST or video appears on the external display only, refer to *LCD Failure*.
7. Disconnect power and all external devices including port replicators or docking stations. Remove any memory cards and CD/DVD discs.
8. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
9. Re-set the memory modules.
10. Remove the drives (refer to Disassembly Process).
11. If the Issue is still not resolved, refer to Online Support Information.

Abnormal Video

If the video appears abnormal, perform the following, one at a time.

1. Boot the computer.
   - If permanent vertical/horizontal lines or dark spots appear in the same location, the LCD is faulty and should be replaced. Refer to Disassembly Process.
   - If extensive pixel damage is present (different colored spots in the same locations on the screen), the LCD is faulty and should be replaced. Refer to Disassembly Process.

NOTE:

Make sure that the computer is not running on battery alone as this may reduce display brightness.

2. Adjust the brightness to its highest level. Refer to the User Manual for instructions on adjusting the settings. If the display is too dim at the highest brightness setting, the LCD is faulty and should be replaced. Refer to Disassembly Process.
3. Check the display resolution is correctly configured:
   - Minimize or close all Windows.
   - If display size is only abnormal in an application, check the view settings and control/mouse wheel zoom feature in the application.
   - If desktop display resolution is not normal, right-click on the desktop and select Personalize Display Settings.
   - Click and drag the Resolution slider to the desired resolution.
   - Click ***Apply*** and check the display. Readjust if necessary.
4. Roll back the video driver to the previous version if updated.
5. Remove and reinstall the video driver.
6. Check the Device Manager to determine that:
   - The device is properly installed. There are no red Xs or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under Other Devices
7. If the Issue is still not resolved, refer to Online Support Information.
8. Run the Windows Memory Diagnostic from the operating system DVD and follow the on-screen prompts.
9. If the Issue is still not resolved, refer to Online Support Information.

LCD Failure

If the LCD fails, perform the following, one at a time. Do not replace a non-defective FRU:

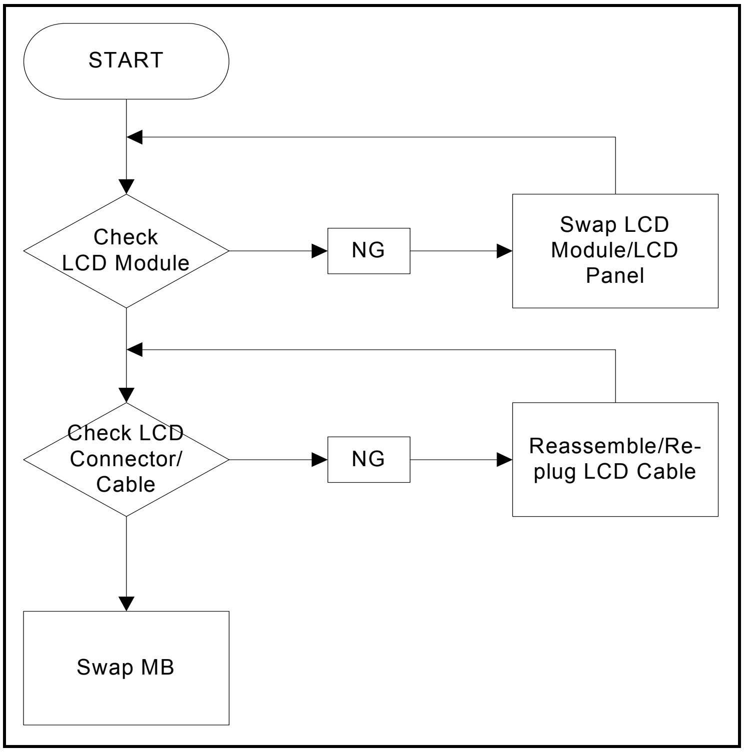


Figure 4-3. LCD Failure

Keyboard Failure

If the Keyboard fails, perform the following, one at a time. Do not replace a non-defective FRU:

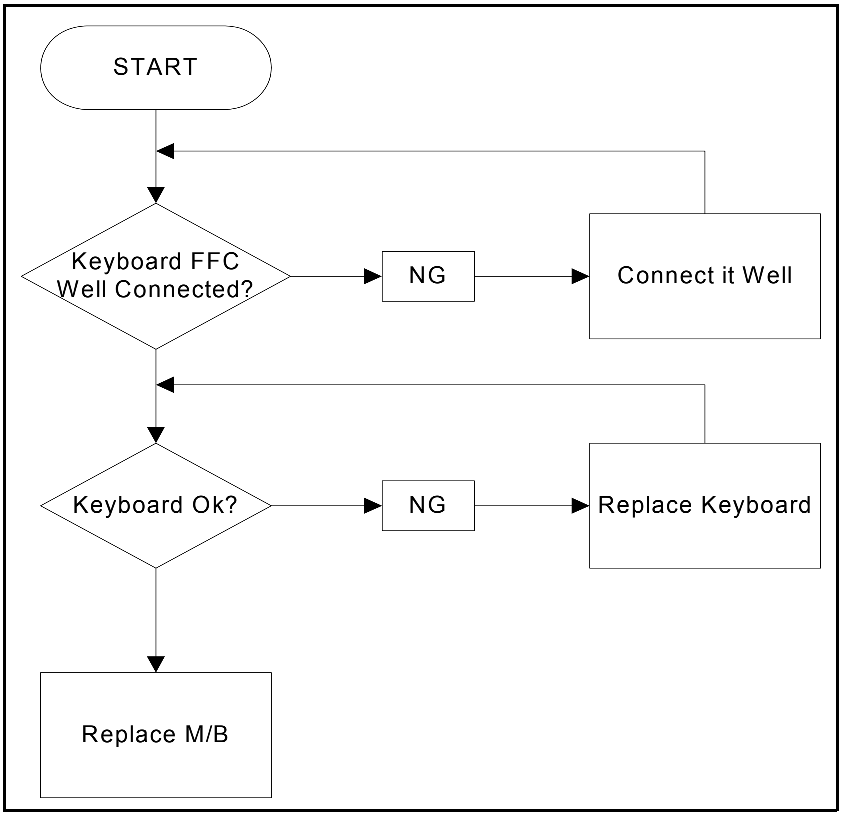


Figure 4-4. Keyboard Failure

Touchpad Failure

If the Touchpad fails, perform the following, one at a time. Do not replace a non-defective FRU:

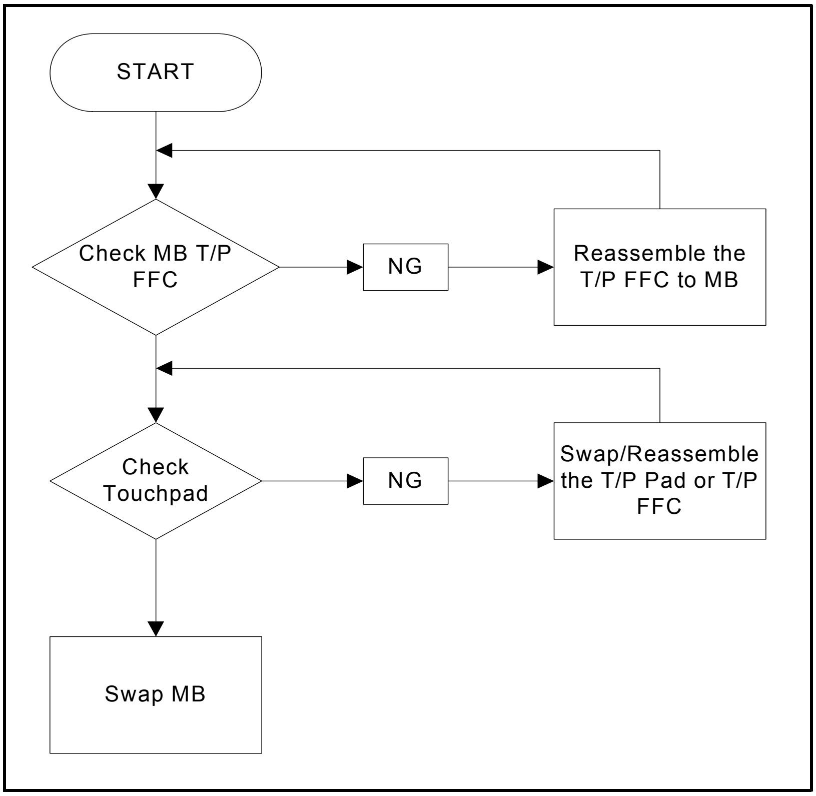


Figure 4-5. Touchpad Failure

Internal & External Speaker Failure

If internal Speakers fail, perform the following, one at a time. Do not replace a non-defective FRU:

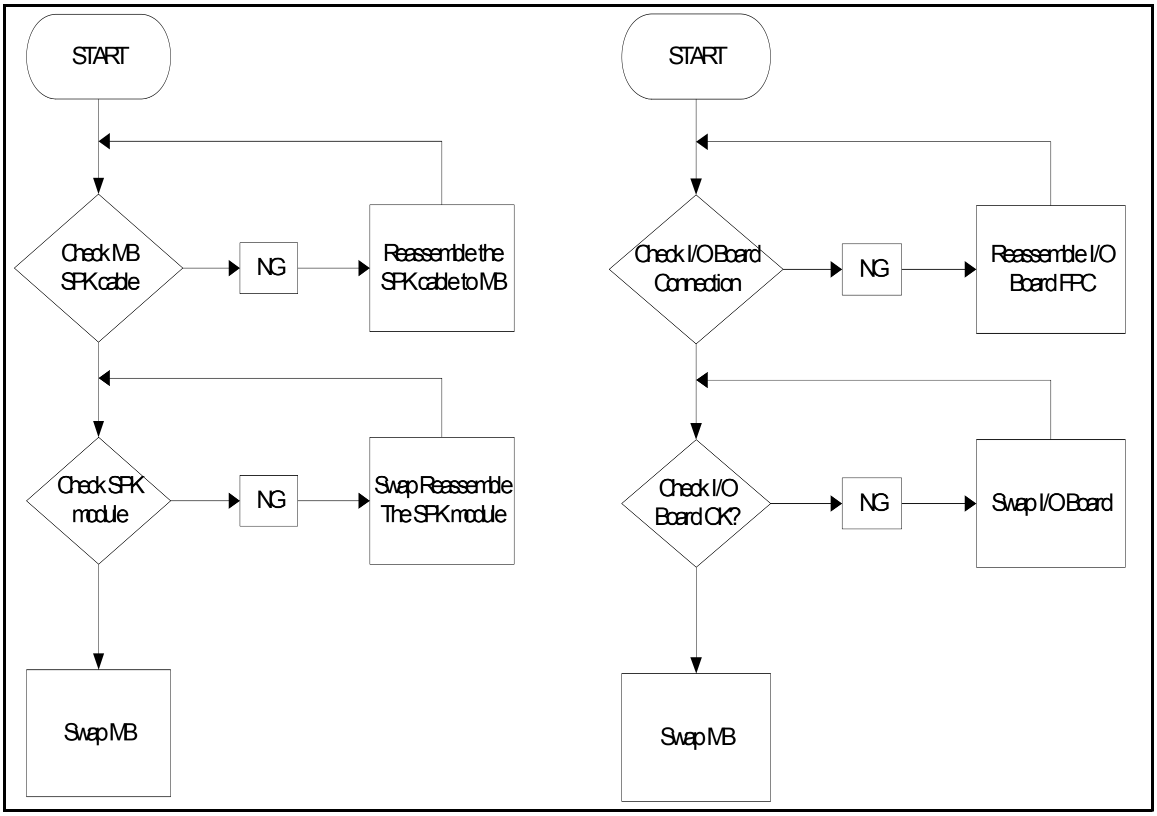


Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following, one at a time.

1. Boot the computer.
2. Navigate to *Start→ Control Panel→ System and Security→ System→ Device Manager*. Check the Device Manager to determine that:
   - The device is properly installed
   - There are no red X or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under Other Devices
3. If updated recently, roll back the audio driver to the previous version.
4. Remove and reinstall the audio driver.
5. Make sure that all volume controls are set mid range:
   - Click the volume icon on the task bar
   - Drag the slider to 50. Confirm that the volume is not muted.

- Click Mixer to verify that other audio applications are set to 50 and not muted.

6. Navigate to *Start→ Control Panel→ Hardware and Sound→ Sound*. Confirm that Speakers are selected as the default audio device (green check mark).

NOTE:

If Speakers do not show, right-click on the Playback tab and select Show Disabled Devices (clear by default).

7. Select Speakers and click Configure to start Speaker Setup. Follow the on-screen prompts to configure the speakers.
8. Remove any recently installed hardware or software.
9. Restore system and file settings from a known good date using System Restore.
10. If the issue is remains, repeat step 9, selecting an earlier time and date.
11. Reinstall the Operating System.
12. Connect a set of earphones or external speakers. If these function correctly, the internal speaker or I/O board may be defective. If they do not function correctly, the mother board may be defective or damaged.
13. If the Issue is still not resolved, refer to Online Support Information.

Microphone Failure

If internal or external Microphones fail, perform the following, one at a time.

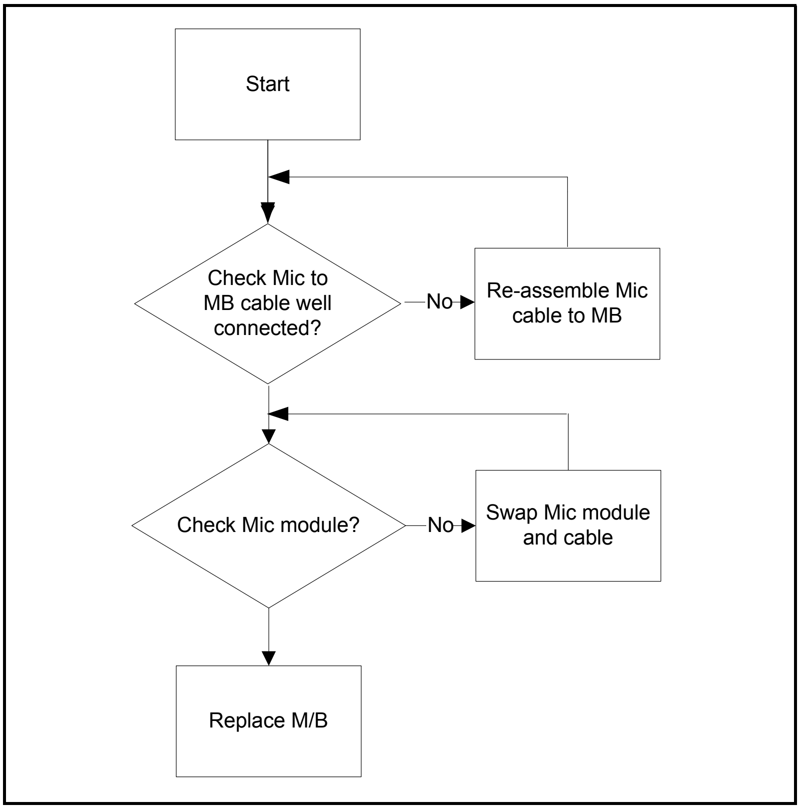


Figure 4-7. Microphone Failure

1. Check that the microphone is enabled. Navigate to *Start-> Control Panel->Hardware and Sound-> Sound* and select the Recording tab.
2. Right click on the Recording tab and select Show Disabled Devices (clear by default). The microphone appears on the Recording tab.
3. Right click on the microphone and select Enable.
4. Select the microphone then click Properties. Select the Levels tab.
5. Increase the volume to the maximum setting and click OK.
6. Test the microphone hardware:
    - Select the microphone and click Configure.
    - Select Set up microphone.
    - Select the microphone type from the list and click Next.
    - Follow the on-screen prompts to complete the test.
7. If the Issue is still not resolved, refer to Online Support Information.

USB Failure

If the USB fails, perform the following, one at a time. Do not replace a non-defective FRU:

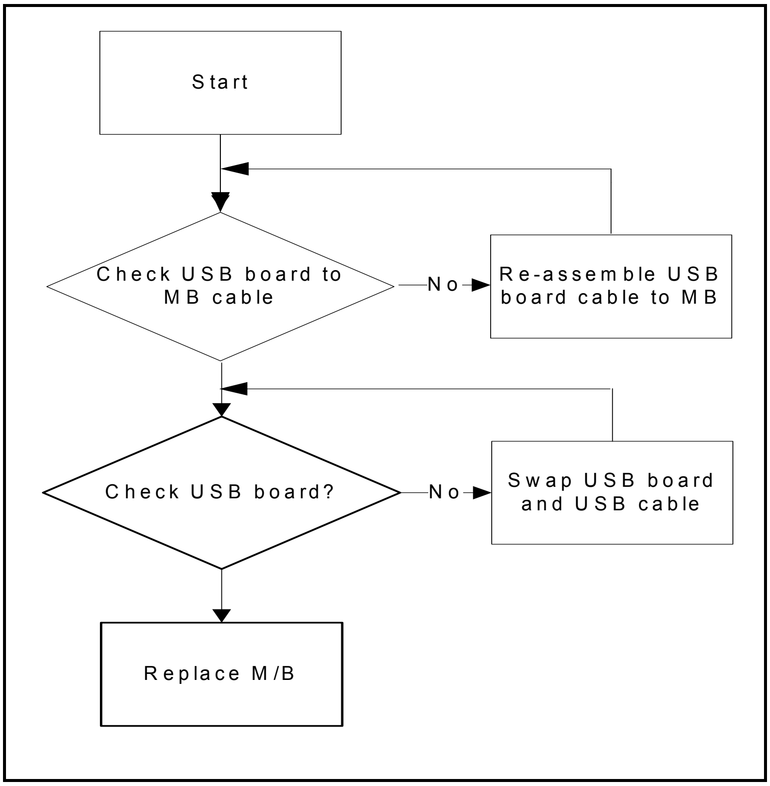


Figure 4-8. USB Failure.

Can not support USB3.0

WLAN Failure

If the WLAN fails, perform the following, one at a time. Do not replace a non-defective FRU:

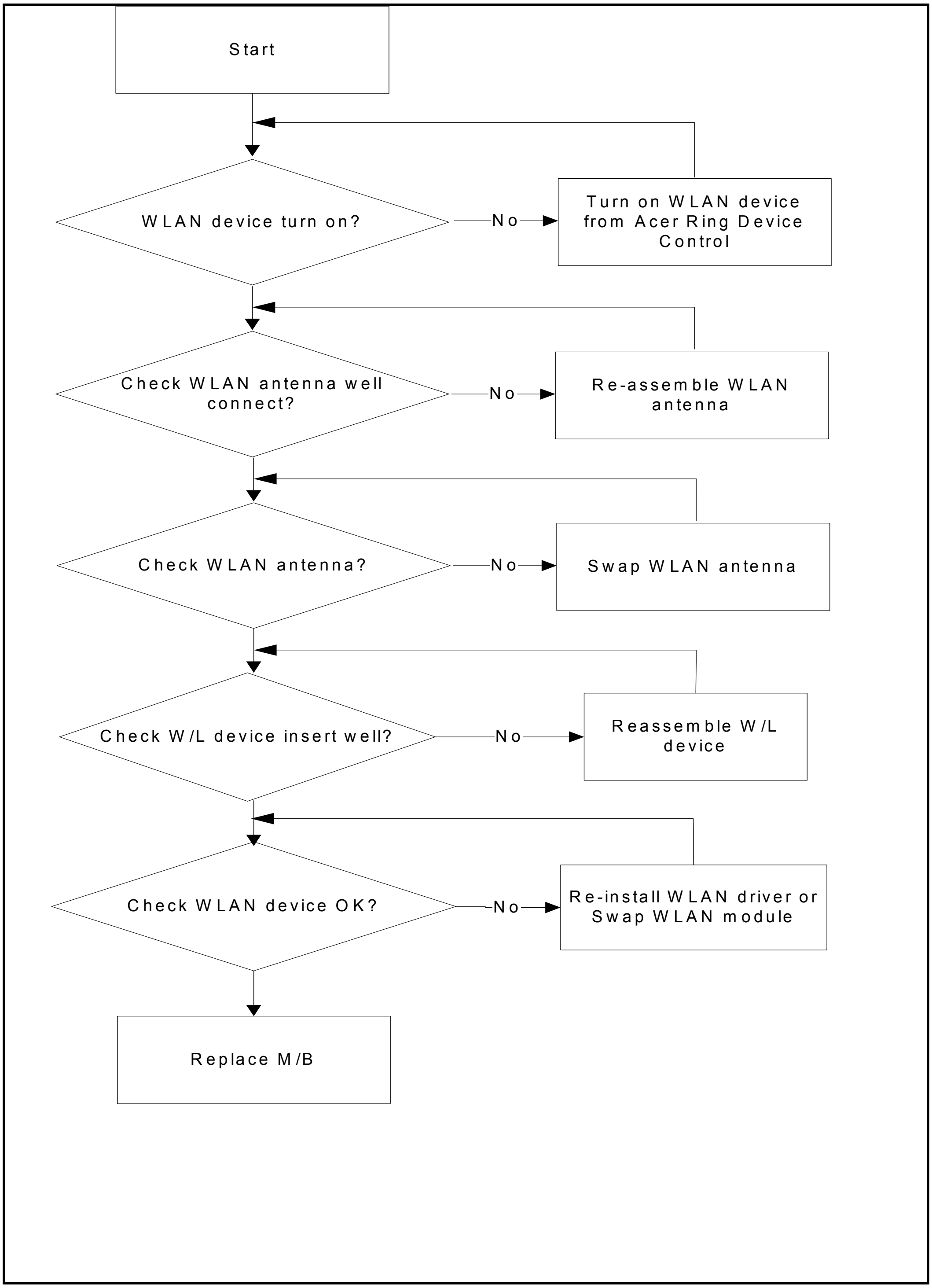


Figure 4-9. WLAN Failure

Card Reader Failure

If the Card Reader fails, perform the following, one at a time. Do not replace a non-defective FRU:

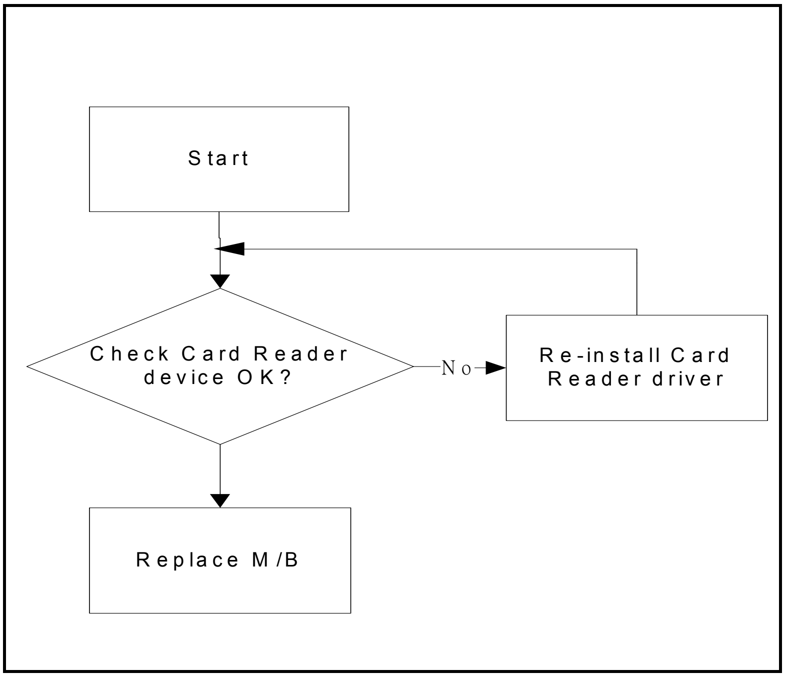


Figure 4-10. Card Reader Failure

The Card Reader device will disappear in device manager for power saving if there is no card inserted. Try to insert card, then the Card Reader appear in device manager.

Thermal Unit Failure

If the Thermal Unit fails, perform the following, one at a time. Do not replace a non-defective FRU:

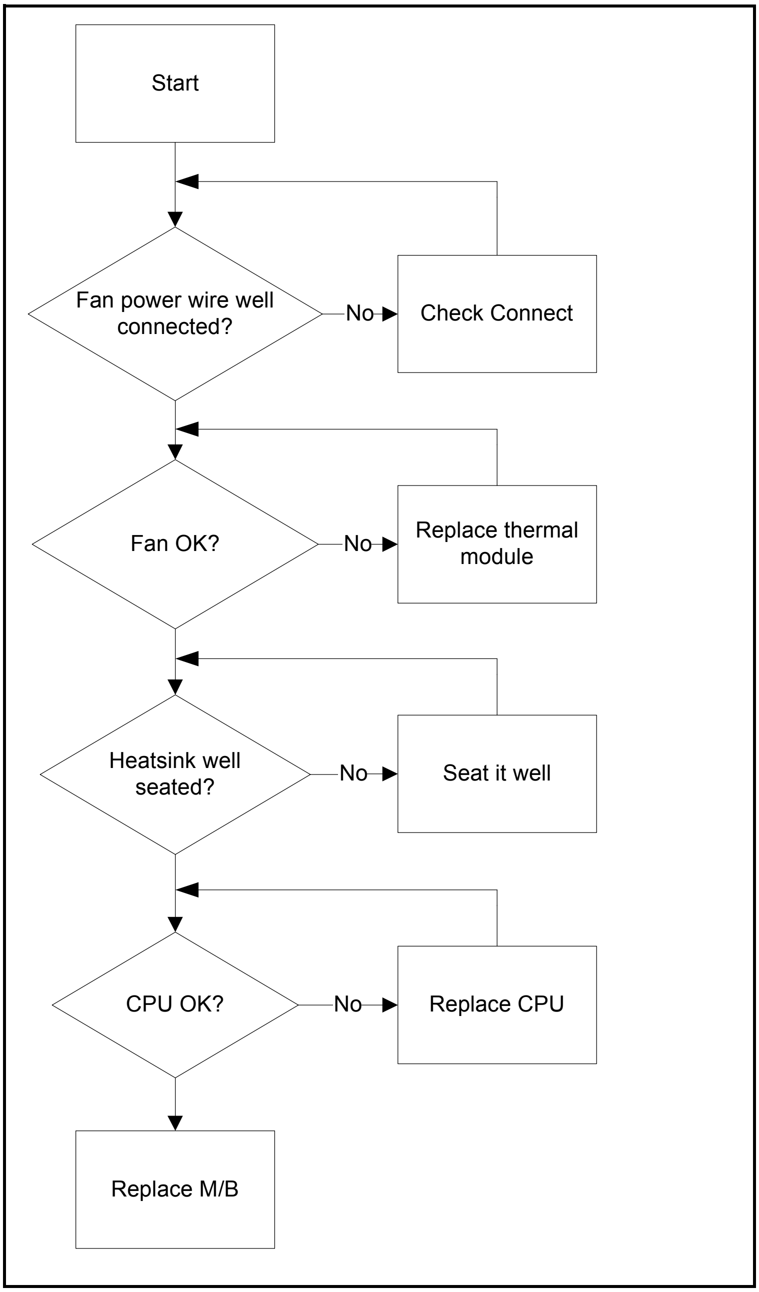


Figure 4-11. Thermal Unit Failure

HDMI and CRT Failure

If the HDMI or CRT function fails, perform the following, one at a time. Do not replace a non-defective FRU:

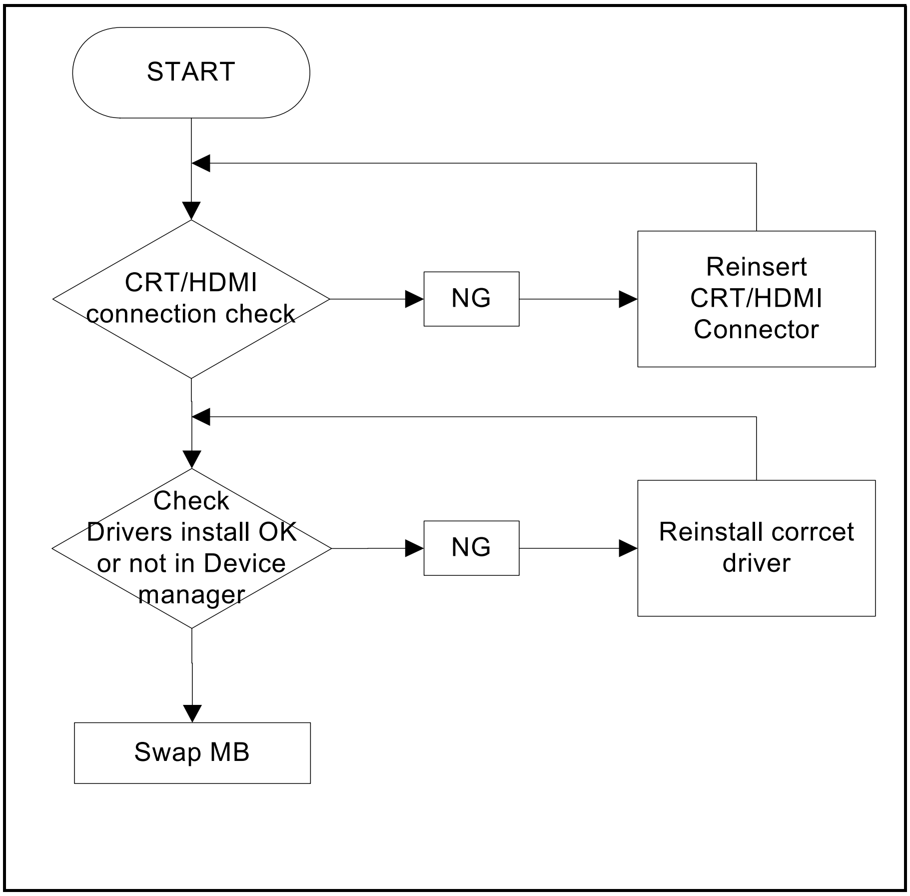


Figure 4-12. HDMI and CRT Failure

CD-ROM/DVD Failure

If the CD-ROM/DVD function fail, perform the following, one at a time. Do not replace a non-defective FRU:

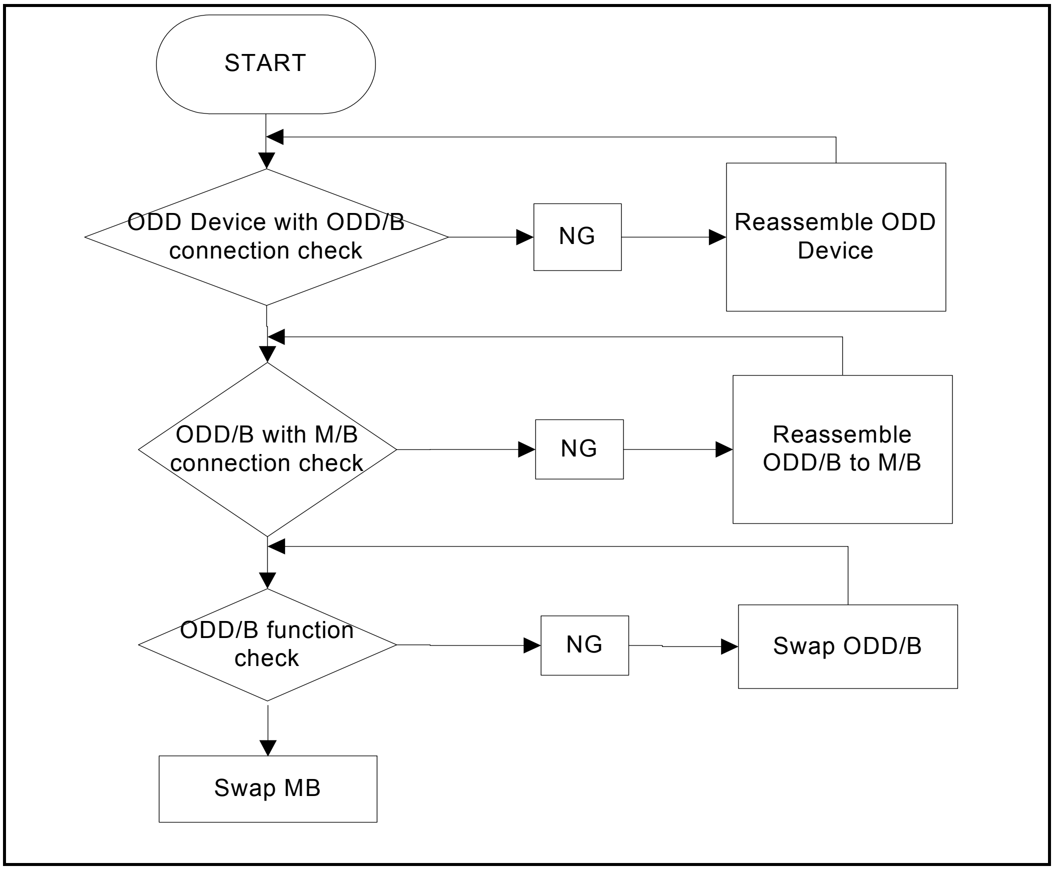


Figure 4-13. CD-ROM/DVD Failure

Other Functions Failure

1. Check if drives are functioning correctly.
2. Check if external modules are functioning correctly.
3. Change main board to check if current one is defective.

Intermittent Problems

Intermittent system hang problems can be caused by a variety of reasons that have nothing to do with a hardware defect, such as: cosmic radiation, electrostatic discharge, or software errors. FRU replacement should be considered only when a recurring problem exists.

When analyzing an intermittent problem, perform the following:

1. Run the advanced diagnostic test for the system board in loop mode at least 10 times.
2. If no error is detected, do not replace any FRU.
3. If an error is detected, replace the FRU. Rerun the test to verify that there are no more errors.

Undetermined Problems

The diagnostic problems does not identify which adapter or device failed, which installed devices are incorrect, whether a short circuit is suspected, or whether the system is inoperative.

Perform the following procedures to isolate the failing FRU (do not isolate non-defective FRU).

NOTE:

Verify that all attached devices are supported by the computer.

NOTE:

Verify that the power supply being used at the time of the failure is operating correctly. (Refer to Power On Issues).

1. Remove power from the computer.
2. Visually check the components for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Battery pack
   - Hard disk drive
   - DIMM
   - CD-ROM/Diskette drive Module
   - PC Cards
4. Apply power to the computer.
5. Determine if the problem has changed.
6. If the problem does not recur, connect the removed devices one at a time until failing FRU is found.
7. If the problem remains, replace the following FRUs one at a time. Do not replace a non-defective FRU:
   - System board
   - LCD assembly

Post Codes

The following are the InsydeH2O™ Functionality POST code tables. The components of the POST code table includes: SEC phase, PEI phase, DXE phase, BDS phase, CSM functions, S3 functions and ACPI functions.

POST Code Range

Table 4-2. POST Code Range

Phase	POST Code Range
SEC	0x01 - 0x0F
PEI	0x70 - 0x9F
DXE	0x40 - 0x6F
BDS	0x10 - 0x3F
SMM	0xA0 - 0xBF
S3	0xC0 - 0xCF
ASL	0x51 – 0x55 0xE1 – 0xE4
PostBDS	0xF9 – 0xFE
InsydeH2ODDT™ Reserve	0xD0 – 0xD7
OEM Reserve	0xE8 – 0xEB
Reserved	0xD8 – 0xE0 0xE5 – 0xE7 0xEC – 0xF8

Table 4-3. SEC Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
SEC_SYSTEM_POWER_ON	SEC	1	CPU power on and switch to Protected mode
SEC_BEFORE_MICROCODE_PATCH	SEC	2	Patching CPU microcode
SEC_AFTER_MICROCODE_PATCH	SEC	3	Setup Cache as RAM
SEC_ACCESS_CSR*	SEC	4	PCIE MMIO Base Address initial
SEC_GENERIC_MSRINIT*	SEC	5	CPU Generic MSR initialization
SEC_CPU_SPEEDCFG*	SEC	6	Setup CPU speed

Table 4-3. SEC Phase POST Code Table (Continued)

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
SEC_SETUP_CAR_OK	SEC	7	Cache as RAM test
SEC_FORCE_MAX_RATIO*	SEC	8	Tune CPU frequency ratio to maximum level
SEC_GO_TO_SECSTARTUP	SEC	9	Setup BIOS ROM cache
SEC_GO_TO_PEICORE	SEC	0A	Enter Boot Firmware Volume
* 3rd party relate functions – Platform dependence.			

Table 4-4. PEI Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
PEI_SIO_INIT	PEI	70	Super I/O Initialization
PEI_CPU_REG_INIT	PEI	71	CPU Early Initialization
PEI_CPU_AP_INIT*	PEI	72	Multi-processor Early Initial
PEI_CPU_HT_RESET*	PEI	73	HyperTransport Initialization
PEI_PCIE_MMIO_INIT	PEI	74	PCIE MMIO BAR Initialization
PEI_NB_REG_INIT	PEI	75	North Bridge Early Initialization
PEI_SB_REG_INIT	PEI	76	South Bridge Early Initialization
PEI_PCIE_TRAINING*	PEI	77	PCIE Training
PEI_TPM_INIT	PEI	78	TPM Initialization
PEI_SMBUS_INIT	PEI	79	SMBUS Early Initialization
PEI_PROGRAM_CLOCK_GEN	PEI	7A	Clock Generator Initialization
PEI_IGD_EARLY_INITIAL *	PEI	7B	Internal Graphic device early Initialization
PEI_HECI_INIT*	PEI	7C	HECI Initialization
PEI_WATCHDOG_INIT*	PEI	7D	Watchdog timer Initialization
PEI_MEMORY_INIT	PEI	7E	Memory Initial for Normal boot.
PEI_MEMORY_INIT_FOR_CRISIS	PEI	7F	Memory Initial for Crisis Recovery
PEI_MEMORY_INSTALL	PEI	80	Simple Memory test
PEI_TXTPEI*	PEI	81	TXT function early Initialization
PEI_SWITCH_STACK	PEI	82	Start to use Memory
PEI_MEMORY_CALLBACK	PEI	83	Set cache for physical memory

Table 4-4. PEI Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
PEI_ENTER_RECOVERY_MODE	PEI	84	Recovery device Initialization
PEI_RECOVERY_MEDIA_FOUND	PEI	85	Found Recovery image
PEI_RECOVERY_MEDIA_NOT_FOUND	PEI	86	Recovery image not found
PEI_RECOVERY_LOAD_FILE_DONE	PEI	87	Load Recovery Image completed
PEI_RECOVERY_START_FLASH	PEI	88	Start Flash BIOS with Recovery image
PEI_ENTER_DXEIPL	PEI	89	Loading BIOS image to RAM
PEI_FINDING_DXE_CORE	PEI	8A	Loading DXE core
PEI_GO_TO_DXE_CORE	PEI	8B	Enter DXE core
* 3rd party relate functions – Platform dependence.			

Table 4-5. DXE Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
DXE_TCGDXE*	DXE	40	TPM initial in DXE
DXE_SB_SPI_INIT*	DXE	41	South bridge SPI initialization
DXE_CF9_RESET*	DXE	42	Setup Reset service
DXE_SB_SERIAL_GPIO_INIT*	DXE	43	South bridge Serial GPIO initialization
DXE_SMMACCESS*	DXE	44	Setup SMM ACCE SS service
DXE_SIO_INIT*	DXE	46	Super I/O DXE initialization
DXE_LEGACY_REGION*	DXE	47	Setup Legacy Region service
DXE_SB_INIT*	DXE	48	South Bridge Middle initialization
DXE_IDENTIFY_FLASH_DEVICE*	DXE	49	Identify Flash device
DXE_FTW_INIT	DXE	4A	Fault Tolerant Write verification
DXE_VARIABLE_INIT	DXE	4B	Variable Service initialization
DXE_VARIABLE_INIT_FAIL	DXE	4C	Fail to initial Variable Service
DXE_MTC_INIT	DXE	4D	MTC Initial
DXE_CPU_INIT	DXE	4E	CPU Middle Initialization
DXE_MP_CPU_INIT	DXE	4F	Multi-processor MiddleInitialization
DXE_SMBUS_INIT	DXE	50	SMBUS Driver Initialization

Table 4-5. DXE Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
DXE_SMART_TIMER_INIT	DXE	51	8259 Initialization
DXE_PCRTC_INIT	DXE	52	RTC Initialization
DXE_SATA_INIT*	DXE	53	SATA Controller earlyInitialization
DXE_SMM_CONTROLER_INIT*	DXE	54	Setup SMM Control service
DXE_LEGACY_INTERRUPT*	DXE	55	Setup Legacy Interrupt service
DXE_RELOCATE_SMBASE	DXE	56	Relocate SMM BASE
DXE_FIRST_SMI	DXE	57	SMI test
DXE_VTD_INIT*	DXE	58	VTD Initial
DXE_BEFORE_CSM16_INIT	DXE	59	Legacy BIOS Initialization
DXE_AFTER_CSM16_INIT	DXE	5A	Legacy interrupt function Initialization
DXE_LOAD_ACPI_TABLE	DXE	5B	ACPI Table Initialization
DXE_SB_DISPATCH*	DXE	5C	Setup SB SMM Dispatcher service
DXE_SB_IOTRAP_INIT*	DXE	5D	Setup SB IOTRAP Service
DXE_SUBCLASS_DRIVER*	DXE	5E	Build AMT Table
DXE_PPM_INIT*	DXE	5F	PPM Initialization
DXE_HECIDRV_INIT*	DXE	60	HECIDRV Initialization
* 3rd party relate functions – Platform dependence.			

Table 4-6. BDS Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_ENTER_BDS	BDS	10	Enter BDS entry
BDS_INSTALL_HOTKEY	BDS	11	Install Hotkey service
BDS_ASF_INIT*	BDS	12	ASF Initialization
BDS_PCI_ENUMERATION_START	BDS	13	PCI enumeration
BDS_BEFORE_PCIIO_INSTALL	BDS	14	PCI resource assign complete
BDS_PCI_ENUMERATION_END	BDS	15	PCI enumeration complete
BDS_CONNECT_CONSOLE_IN	BDS	16	Keyboard Controller, keyboard and mouse initialization
BDS_CONNECT_CONSOLE_OUT	BDS	17	Video device initialization

Table 4-6. BDS Phase POST Code Table

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
BDS_CONNECT_STD_ERR	BDS	18	Error report device initialization
BDS_CONNECT_USB_HC	BDS	19	USB host controller initialization
BDS_CONNECT_USB_BUS	BDS	1A	USB BUS driver initialization
BDS_CONNECT_USB_DEVICE	BDS	1B	USB device driver initialization
BDS_NO_CONSOLE_ACTION	BDS	1C	Console device initial fail
BDS_DISPLAY_LOGO_SYSTEM_INFO	BDS	1D	Display logo or system information
BDS_START_IDE_CONTROLLER	BDS	1E	IDE controller initialization
BDS_START_SATA_CONTROLLER	BDS	1F	SATA controller initialization
BDS_START_ISA_ACPI_CONTROLLER	BDS	20	SIO controller initialization
BDS_START_ISA_BUS	BDS	21	ISA BUS driver initialization
BDS_START_ISA_FDD	BDS	22	Floppy device initialization
BDS_START_ISA_SEIRAL	BDS	23	Serial device initialization
BDS_START_IDE_BUS	BDS	24	IDE device initialization
BDS_START_AHCI_BUS	BDS	25	AHCI device initialization
BDS_CONNECT_LEGACY_ROM	BDS	26	Dispatch option ROMs
BDS_ENUMERATE_ALL_BOOT_OPTION	BDS	27	Get boot device information
BDS_END_OF_BOOT_SELECTION	BDS	28	End of boot selection
BDS_ENTER_SETUP	BDS	29	Enter Setup Menu
BDS_ENTER_BOOT_MANAGER	BDS	2A	Enter Boot manager
BDS_BOOT_DEVICE_SELECT	BDS	2B	Try to boot system to OS
BDS_EFI64_SHADOW_ALL_LEGACY_ROM	BDS	2C	Shadow Misc Option ROM
BDS_ACPI_S3SAVE	BDS	2D	Save S3 resume required data in RAM
BDS_READY_TO_BOOT_EVENT	BDS	2E	Last Chipset initial before boot to OS
BDS_GO_LEGACY_BOOT	BDS	2F	Start to boot Legacy OS
BDS_GO_UEFI_BOOT	BDS	30	Start to boot UEFI OS
BDS_LEGACY16_PREPARE_TO_BOOT	BDS	31	Prepare to Boot to Legacy OS
BDS_EXIT_BOOT_SERVICES*	BDS	32	Send END of POST Message to ME via HECI

Table 4-6. BDS Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_LEGACY_BOOT_EVENT	BDS	33	Last Chipset initial before boot to Legacy OS.
BDS_ENTER_LEGACY_16_BOOT	BDS	34	Ready to Boot Legacy OS.
BDS_RECOVERY_START_FLASH	BDS	35	Fast Recovery Start Flash.
* 3rd party relate functions – Platform dependence.			

Table 4-7. S3 Function POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
S3_RESTORE_MEMORY_CONTROLLER	PEI	C0	Memory initial for S3 resume
S3_INSTALL_S3_MEMORY	PEI	C1	Get S3 resume required data from memory
S3_SWITCH_STACK	PEI	C2	Start to use memory during S3 resume
S3_MEMORY_CALLBACK	PEI	C3	Set cache for physical memory during S3 resume
S3_ENTER_S3_RESUME_PEIM	PEI	C4	Start to restore system configuration
S3_BEFORE_ACPI_BOOT_SCRIPT	PEI	C5	Restore system configuration stage1
S3_BEFORE_RUNTIME_BOOT_SCRIPT	PEI	C6	Restore system configuration stage2
S3_BEFORE_RELOCATE_SMM_BASE	PEI	C7	Relocate SMM BASE during S3 resume
S3_BEFORE_MP_INIT	PEI	C8	Multi-processor initial during S3 resume
S3_BEFORE_RESTORE_ACPI_CALLBACK	PEI	C9	Start to restore system configuration in SMM
S3_AFTER_RESTORE_ACPI_CALLBACK	PEI	CA	Restore system configuration in SMM complete
S3_GO_TO_FACS_WAKING_VECTOR	PEI	CB	Back to OS

Table 4-8. ACPI Function POST Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
ASL_ENTER_S1	ASL	51	Prepare to enter S1
ASL_ENTER_S3	ASL	53	Prepare to enter S3
ASL_ENTER_S4	ASL	54	Prepare to enter S4
ASL_ENTER_S5	ASL	55	Prepare to enter S5
ASL_WAKEUP_S1	ASL	E1	System wakeup from S1
ASL_WAKEUP_S3	ASL	E3	System wakeup from S3
ASL_WAKEUP_S4	ASL	E4	System wakeup from S4

Table 4-9. SMM Functions POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
SMM_IDENTIFY_FLASH_DEVICE	SMM	0xA0	Identify Flash device in SMM
SMM_SMM_PLATFORM_INIT	SMM	0xA2	SMM service initial
SMM_ACPI_ENABLE_START	SMM	0xA6	OS call ACPI enable function
SMM_ACPI_ENABLE_END	SMM	0xA7	ACPI enable function complete
SMM_S1_SLEEP_CALLBACK	SMM	0xA1	Enter S1
SMM_S3_SLEEP_CALLBACK	SMM	0xA3	Enter S3
SMM_S4_SLEEP_CALLBACK	SMM	0xA4	Enter S4
SMM_S5_SLEEP_CALLBACK	SMM	0xA5	Enter S5
SMM_ACPI_DISABLE_START	SMM	0xA8	OS call ACPI disable function
SMM_ACPI_DISABLE_END	SMM	0xA9	ACPI disable function complete

Table 4-10. InsydeH2ODDT Debugger POST Code Table

Functionality Name (Include\ PostCode.h)	Post Code	Description
Used by Insyde debugger	0x0D	Waiting for device connect
Used by Insyde debugger	0xD0	Waiting for device connect
Used by Insyde debugger	0xD1	InsydeH2ODDT Ready
Used by Insyde debugger	0xD2	EHCI not found

Table 4-10. InsydeH2ODDT Debugger POST Code Table (Continued)

Functionality Name (Include\ PostCode.h)	Post Code	Description
Used by Insyde debugger	0xD3	Debug port connect low speed device
Used by Insyde debugger	0xD4	DDT Cable become low speed device
Used by Insyde debugger	0xD5	DDT Cable Transmission Error (Get descriptor fail)
Used by Insyde debugger	0xD6	DDT Cable Transmission Error (Set Debug mode fail)
Used by Insyde debugger	0xD7	DDT Cable Transmission Error (Set address fail)

CHAPTER 5

Jumper and Connector Locations

Jumper and Connector Locations

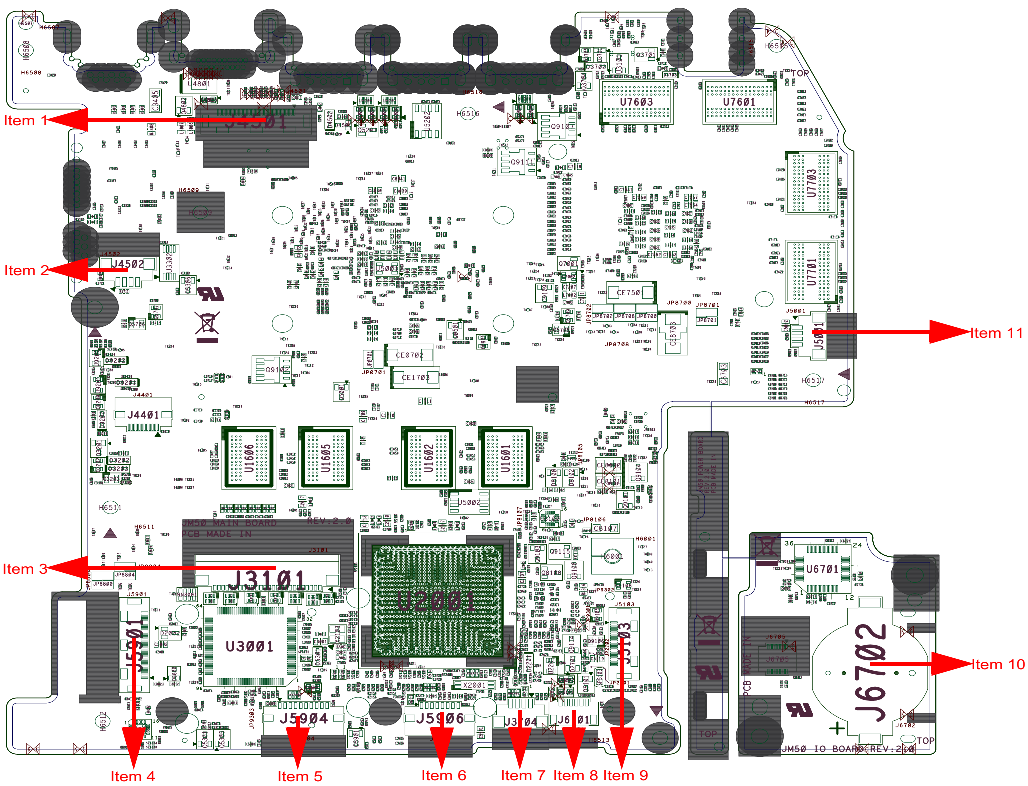


Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Connector	Description
1	J4501	LVDS Connector
2	J4502	Microphone Connector
3	J3101	Keyboard Connector
4	J5901	IO Board Connector
5	J5904	Power Switch Board Connector
6	J5906	Touchpad Connector
7	J3704	Speaker Connector
8	J6101	Bluetooth Connector
9	J5103	HDD Connector
10	J6702	RTC Battery Connector

Table 5-1. Mainboard Top

Item	Connector	Description
11	J5001	Fan Connector

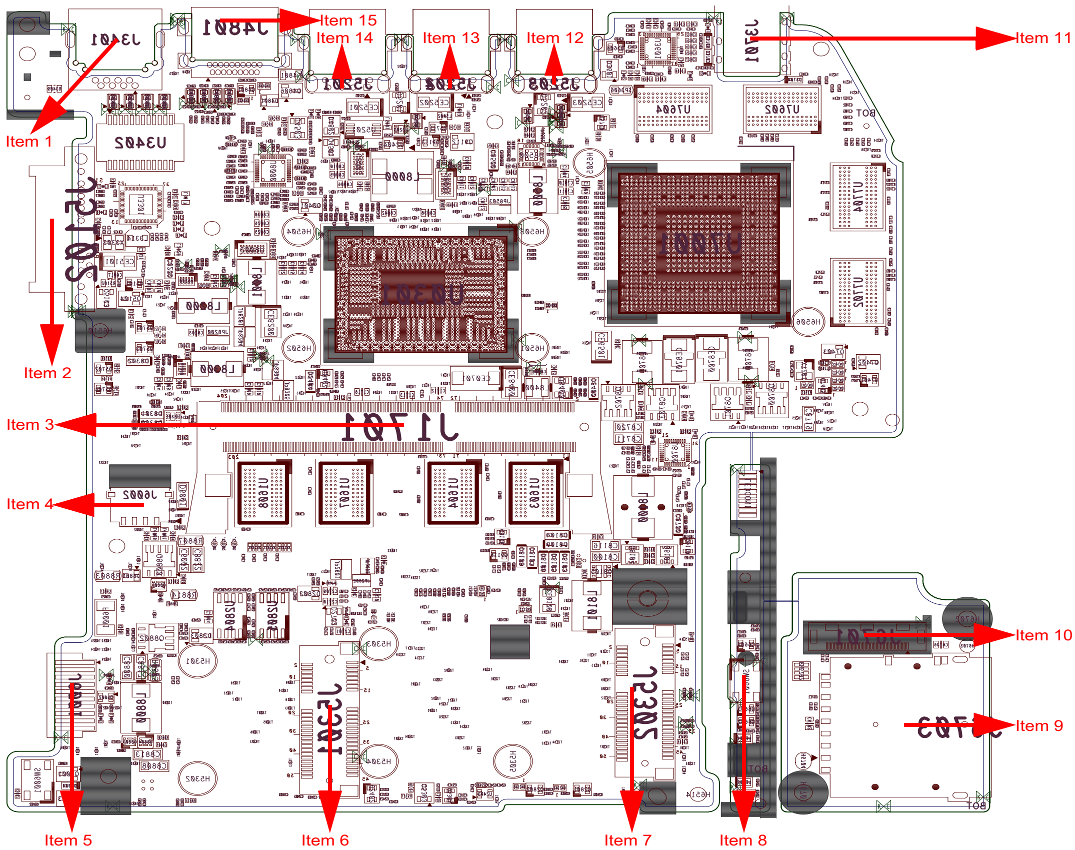


Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

Item	Connector	Description
1	J3401	LAN Connector
2	J5102	ODD Connector
3	J1701	DDR3-SO-DIMM Connector
4	J6002	DC-IN Connector
5	J6001	Battery Connector
6	J5301	WLAN Connector
7	J5302	SSD SATA Connector
8	SW6601	Power Button
9	J6703	SD card Socket

Item	Connector	Description
10	J6701	Mainboard Connector
11	J3701	Headphone Jack
12	J5203	USB 2.0 Connector
13	J5202	USB 2.0 Connector
14	J5201	USB 3.0 Connector
15	J4801	HDMI Connector

Clearing Password Check and BIOS Recovery

This section provides procedures for:

Clearing Passwords

BIOS Recovery.

This Machine has one Hardware Open Gap on the main board for clearing password check and one Hotkey for enabling BIOS Recovery.

Clearing Password Check

NOTE:

The following procedure is only for clearing BIOS Password (Supervisor Password and User Password).

Steps for Clearing BIOS Password Check

If users set BIOS Passwords (Supervisor Password and/or User Password) for a security reason, BIOS will ask the password during systems POST or when system enters the BIOS Setup menu. If it is necessary to bypass the password check, short the HW Gap to clear the password by performing the following steps:

1. Remove power from the system.
2. Remove HDD, AC and Battery.
3. Disconnect the RTC Battery (Figure 5-1 Item10).
4. Locate the RTCRST# jumper (Figure 5-3).
5. Use an electric conductivity tool to short the two points of the RTCRST# jumper.
6. Plug in AC, keeping the RTCRST# jumper shorted.
7. Press ***Power*** *Button* until BIOS POST is finished, then remove the conductivity tool from the RTCRST# jumper.
8. Restart the system. Press ***F2*** to enter BIOS Setup menu.
9. If there is no Password request, BIOS Password is cleared.
10. If a password is requested, repeat Steps 1 through 9.

Clear CMOS Jumper

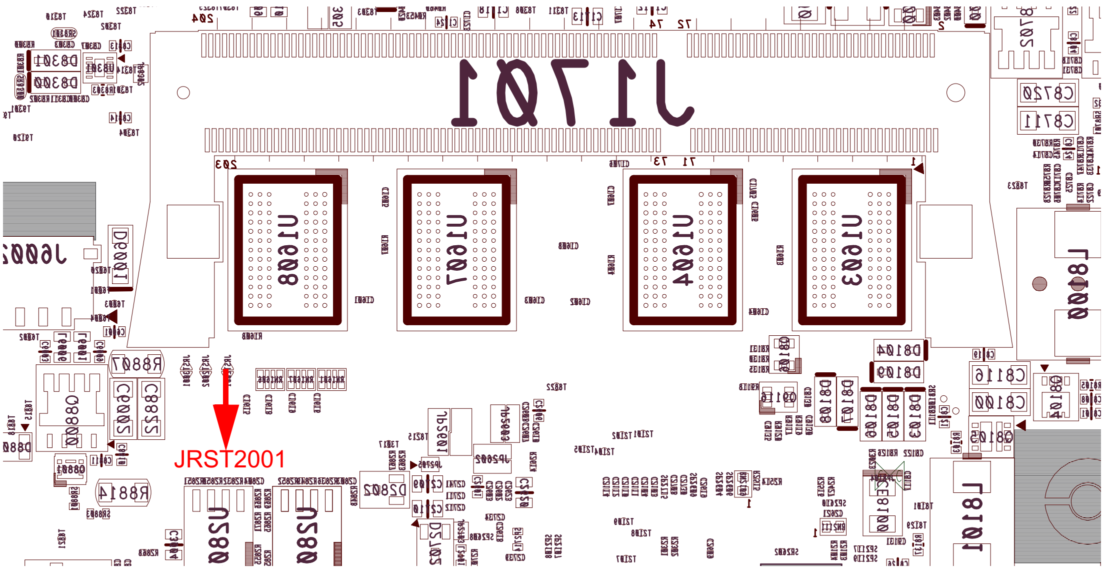


Figure 5-3. CMOS Jumper

Table 5-3. CMOS Jumper

Item	Description
RTCRST# (JRST2001)	Clear CMOS Jumper

BIOS Recovery by Crisis Disk

BIOS Recovery Boot Block

BIOS Recovery Boot Block is a special block of BIOS, used to boot the system with minimum BIOS initialization. Users can enable this feature to restore the BIOS firmware once the previous BIOS flashing process failed.

BIOS Recovery Hotkey

A function hotkey- < ***Fn+Esc*** **>**, used to enable the BIOS Recovery process when system is powered On during BIOS POST. To use this function, it is strongly recommended to have the AC adapter and Battery present. If this function is enabled, the system will force the BIOS to enter a special BIOS block, called Boot Block.

Steps for BIOS Recovery from USB Storage

NOTE:

Prior to performing the recovery, prepare a Crisis USB key. The Crisis USB key is created by executing the Crisis Disk program in another system with Windows 7 OS.

To Create a Crisis USB key, perform the following:

1. Format the USB storage disk using the Fast Format option.
2. Save ROM file (File name:**MA50X64.FD**) to the root directory of USB storage. Make sure that there is no other BIOS file saved in the same directory.
3. Plug USB storage into USB port.
4. Press < ***Fn+ESC*** **>** button then plug in AC power.
5. The Power button flashes once.
6. Press ***Power*** button to initiate system CRISIS mode.
7. When CRISIS is complete, the system auto restarts with a workable BIOS.
8. Update the latest version BIOS for this machine by regular BIOS flashing process.

CHAPTER 6

FRU List

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the MA50_HX. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE:

WHEN ORDERING FRU PARTS, check the most up-to-date information available on the regional web or channel. Part number changes will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, the Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. Users MUST use the local FRU list provided by the regional Acer office to order FRU parts for repair and service of customer machines.

NOTE:

To scrap or to return the defective parts, users should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by the regional Acer office on how to return it.

MA50_HX Exploded Diagrams

Main Assembly

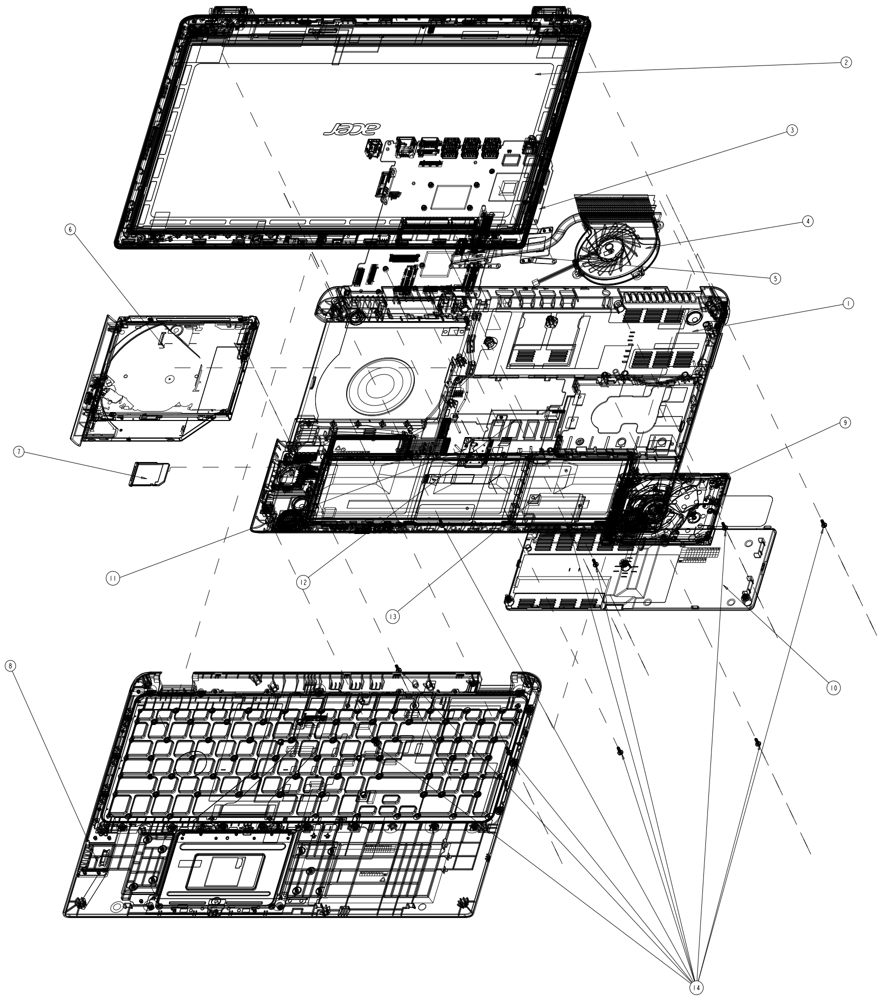


Figure 6-1. Main Assembly Exploded Diagram

Table 6-1. Main Assembly Exploded Diagram

Item	Description	Part Number
1	JM50-1A BOTTOM CASE MODULE	
2	LED LCD 15.6" WXGA Glare MOUDLE ASSY BLACK W/CCD MIC	6M.RY8N5.002
3	MA50_HX_i3-2367M_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.RYK11.003
4	THERMAL MODULE	60.RY8N5.004

Table 6-1. Main Assembly Exploded Diagram

Item	Description	Part Number
5	HDD CABLE	50.RY8N5.004
6	ODD SUPER MULTI MODULE ASSY	6M.RY8N5.001
7	SD DUMMY CARD	42.RY8N5.003
8	JM50-1A TOP CASE MODULE	
9	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380, Jaguar B7,0J23335, 500G/P SATA 8MB LF+HF F/W:DA4837	KH.50007.023
10	HDD COVER	
11	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072
12	Memory ELPIDA SO-DIMM DDRIII 1600 4GB EBJ40UG8BBU0-GN-F LF+HF 512*8 38nm	KN.4GB09.005
13	Flash Disk PHISON SSD NAND 20GB SSE020GTTC0-S51 LF+HF	KN.0200Q.002
14	SCREW M2*6L(K,D4.6) B-ZN #1 NY	86.RY8N5.005

LCD Assembly

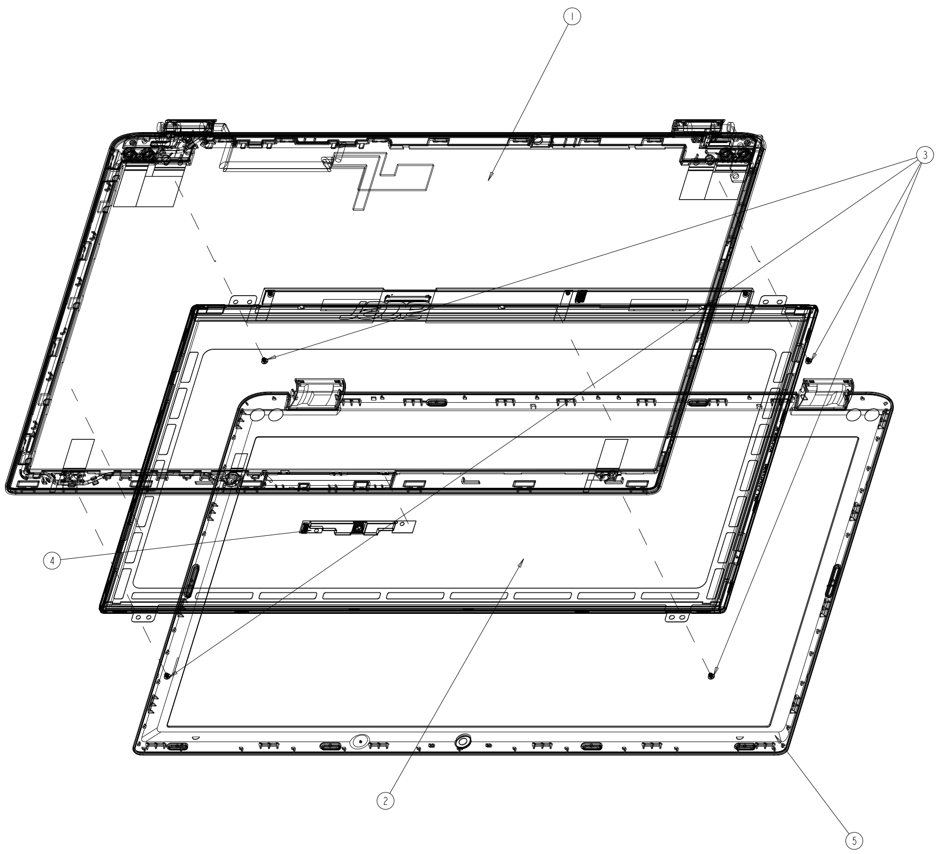


Figure 6-2. LCD Assembly Exploded Diagram

Table 6-2. LCD Assembly Exploded Diagram

Item	Description	Part Number
1	LCD COVER ASSY BLACK W/LVDS CABLE, MIC	
2	LED LCD AUO 15.6"W WXGA Glare B156XTN03.2 LF 200nit 8ms 500:1 (ultra-slim)	LK.15605.026
3	SCREW M2*2.5L(K)(ψ3.7) W-NI	86.W750U.003
4	CAMERA MODULE 1.3M	AM.21400.121
5	LCD BEZEL	

Top Case Assembly

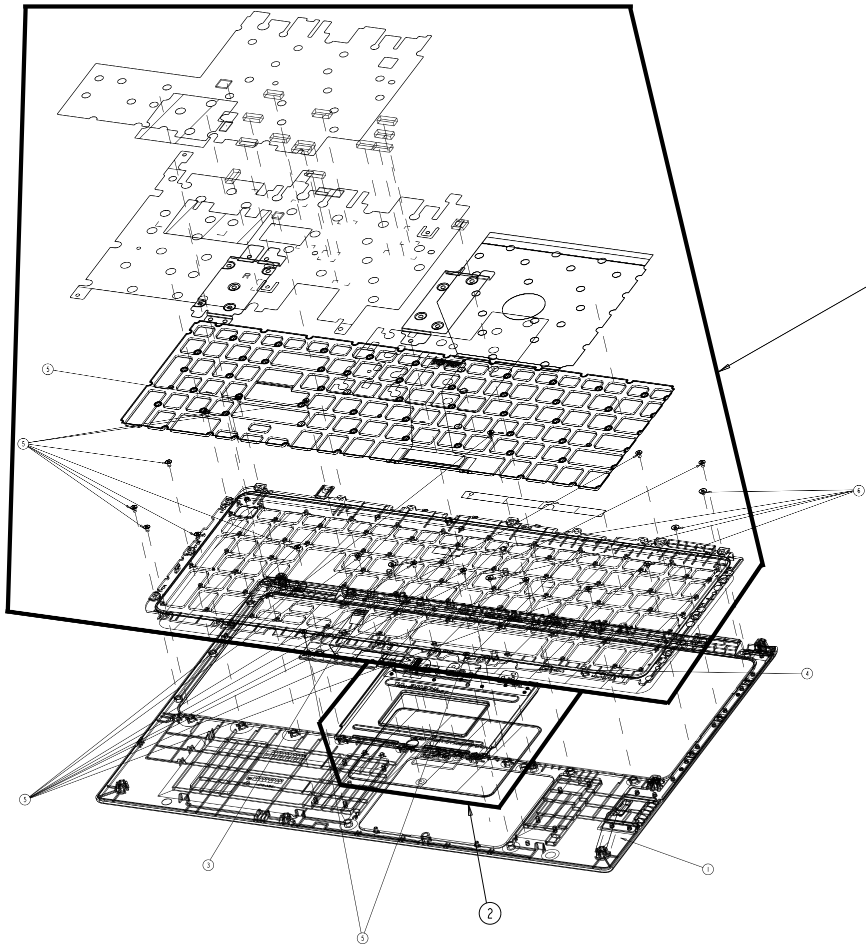


Figure 6-3. Top Case Assembly Exploded Diagram

Table 6-3. Top Case Assembly Exploded Diagram

Item	Description	Part Number
1	UPPER CASE ASSY	
2	CLICKPAD MODULE	55.RY8N5.001
3	FFC - CLICK PAD TO MB	50.RY8N5.001
4	CLICKPAD POST	
5	SCREW M2*3L K B-ZN #1 NY	86.RY8N5.006
6	SCREW M2*2L (K,D=5) W-NI #1 NY	86.RY8N5.003

Table 6-3. Top Case Assembly Exploded Diagram

Item	Description	Part Number
7	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black US International W/FRAME , FOIL , MYLAR	60.RYKN5.001

Bottom Case Assembly

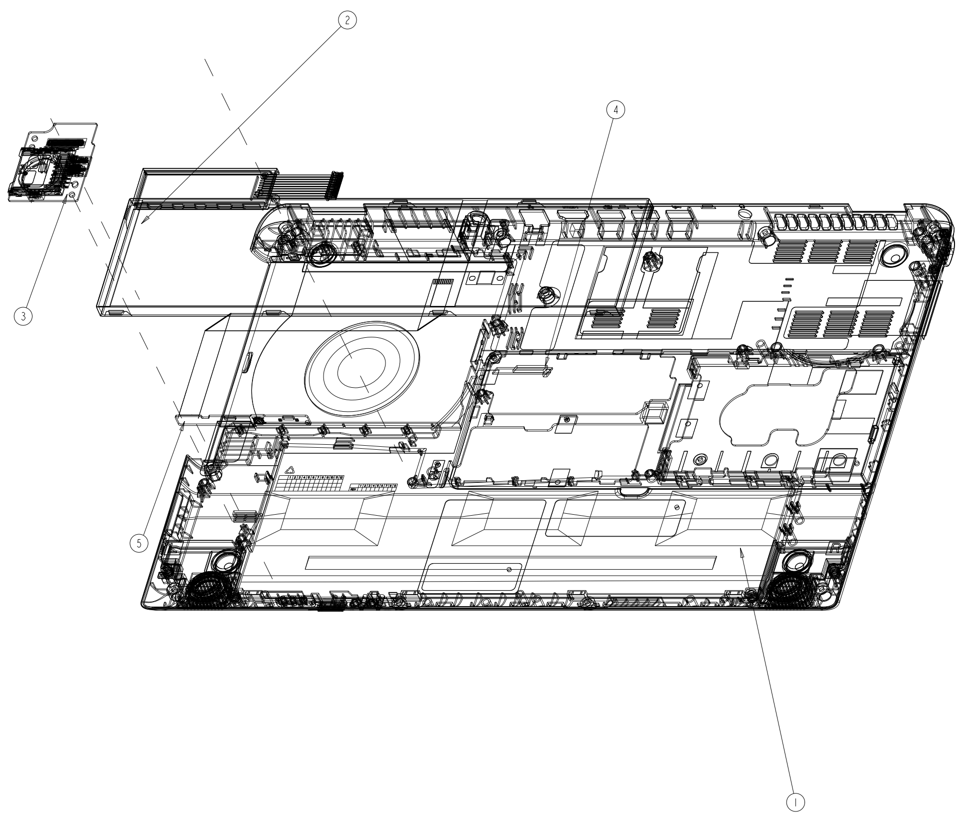


Figure 6-4. Bottom Case Assembly Exploded Diagram

Table 6-4. Bottom Case Assembly Exploded Diagram

Item	Description	Part Number
1	LOWER CASE ASSY W/ANTENNA , SPEAKER	

Table 6-4. Bottom Case Assembly Exploded Diagram

Item	Description	Part Number
2	Battery SANYO ID:AP12A3i Li-Polymar 3S1P SANYO 3 cell 4850mAh Main COMMON for embedded type	BT.00303.028
3	IO/CARD READER BOARD FOR TPM	55.RYKN5.003
4	BT 4.0 Foxconn Braodcom 20702	BH.21100.018
5	POWER BUTTON BOARD W/FFC FOR TPM	55.RYKN5.001

FRU List

Table 6-5. FRU list

Category	Description	P/N
ADAPTER		
	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65VH BA, LV5, Low profile LED LF	AP.06501.033
	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-69AW, LV5, Low profile LED LF	AP.06503.029
	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017
BATTERY		
	Battery SANYO ID:AP12A3i Li-Polymar 3S1P SANYO 3 cell 4850mAh Main COMMON for embedded type	BT.00303.028
BOARD		
	CLICKPAD MODULE	55.RY8N5.001
	BT 4.0 Foxconn Braodcom 20702	BH.21100.018
	BT 4.0 Foxconn Atheros BU22	BH.21100.017

Table 6-5. FRU list

Category	Description	P/N
	Foxconn Wireless LAN Broadcomm 43227 2x2 BGN	NI.23600.087
	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072
	Liteon Wireless LAN Atheros HB97 2x2 BGN (HM) WN6603AH	NI.23600.073
	Foxconn 3rd WiFi 2x2 AGN+ BT4.0 Atheros WB222	NI.23600.102
	Liteon 3rd WiFi 2x2 AGN+ BT4.0 Atheros WB222	NI.23600.103
	POWER BUTTON BOARD W/FFC FOR TPM	55.RYKN5.001
	POWER BUTTON BOARD W/FFC	55.RY8N5.002
	IO/CARD READER BOARD FOR TPM	55.RYKN5.003
	IO/CARD READER BOARD	55.RY8N5.003
	TPM DAUGHTER BOARD (For future SKU)	55.RYKN5.002
POWER CORD		
	POWER CORD US 3PIN 1.8M BLACK	27.RGV0U.006
	POWER CORD (EU) 1.8M 3P BLACK	27.RGV0U.001
	POWER CORD UK 3PIN	27.RGV0U.002
	POWER CORD US-110V (BSMI) 3P	27.RGV0U.008
	POWER CORD PRC 3P	27.RGV0U.004
	POWER CORD 1.8M 3 PIN AF	27.RGV0U.010
	POWER CORD DANISH 3P BLACK	27.RGV0U.007
	AC POWER CORD PSE/3C,BLK	
CABLE		
	FFC - CLICK PAD TO MB	50.RY8N5.001

Table 6-5. FRU list

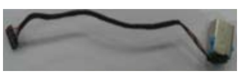
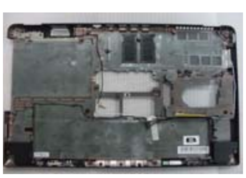
Category	Description	P/N
	BT CABLE	50.RY8N5.002
	IO/CARD READER CABLE	50.RY8N5.003
	IO/CARD READER CABLE FOR TPM	50.RYKN5.001
	HDD CABLE	50.RY8N5.004
	LVDS CABLE	50.RY8N5.006
	LVDS CABLE EDP	
	DC-IN CABLE	50.RY8N5.005
CASE/COVER/BRACKET ASSEMBLY		
	HDD COVER	
	UPPER CASE ASSY	
	LOWER CASE ASSY W/ANTENNA , SPEAKER	

Table 6-5. FRU list

Category	Description	P/N
	CLICKPAD POST	
	ODD BRACKET	
	ODD BEZEL	
	DC BRACKET	
	SD DUMMY CARD	42.RY8N5.003
	LCD COVER ASSY BLACK W/LVDS CABLE, MIC	
	LCD COVER ASSY BLACK W/LVDS CABLE, MIC	
	LCD BEZEL	
DVD RW DRIVE		
	ODD HLDS Super-Multi DRIVE 9.0mm Tray 8X GU61N LF+HF W/O bezel SATA	KU.0080D.064

Table 6-5. FRU list

Category	Description	P/N
HDD		
	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380,Jaguar B7, 500G/P SATA 8MB LF+HF F/W:DA4466	KH.50007.016
	HDD SEAGATE 2.5" 5400rpm 320GB ST320LT020/9YG142-188, Sapta 15,320G/P SATA 8MB LF+HF F/W:0001SDM1 7mmzh	KH.32001.021
	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384, Eagle B7, 320G/P SATA LF+HF F/W:A60W 7mmzh	KH.32007.013
	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380, Jaguar B7,0J23335, 500G/P SATA 8MB LF+HF F/W:DA4837	KH.50007.023
	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J28213,Eagle B7, 320G/P 7mmzh SATA 8MB LF+HF F/W:DA4788	KH.32007.017
	HDD SEAGATE 2.5" 5400rpm 500GB 9WS142-188 ST500LT012, Yarra 500G/P, 7mmzh SATA 8MB LF+HF F/W:0001SDM1	KH.50001.030
SSD		
	Flash Disk SANDISK SSD NAND 32GB SDSA5DK-032G LF+HF	KF.0320D.003
	Flash Disk PHISON SSD NAND 20GB SSE020GTTC0-S51 LF+HF	KN.0200Q.002
	Flash Disk LITE-ON SSD NAND 128GB LMT-128M3M LF+HF firmware: VYC2	KF.1280L.001
	Flash Disk LITE-ON SSD NAND 256GB LMT-256M3M LF+HF firmware:VZC2	KF.2560L.001
KEYBOARD		

Table 6-5. FRU list

Category	Description	P/N
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black ARABIC W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Belgium W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Brazilian Portuguese W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Bulgaria W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black CZ/SK W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black CHINESE W/FRAME , FOIL , MYLAR	60.RYKN5.002
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Danish W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black FR/Arabic W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black French W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black GREMAN W/FRAME , FOIL , MYLAR	60.RYKN5.003
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black Greek W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Hungarian W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Italian W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 107KS Black Japanese W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black Korean W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Nordic W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Norwegian W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Portuguese W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black Russian W/FRAME , FOIL , MYLAR	

Table 6-5. FRU list

Category	Description	P/N
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black SLO/CRO W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Spanish W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Sweden W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Swiss/G W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black Thailand W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black Turkish W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black UK W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black US International W/FRAME , FOIL , MYLAR	60.RYKN5.001
	KEYBOARD CHICONY AF7S_A10B AF7S 103KS Black US International w/ Hebrew W/FRAME , FOIL , MYLAR	
	KEYBOARD CHICONY AF7S_A10B AF7S 104KS Black US w/ Canadian French W/FRAME , FOIL , MYLAR	
LCD		
	LED LCD AUO 15.6"W WXGA Glare B156XTN03.2 LF 200nit 8ms 500:1 (ultra-slim)	LK.15605.026
	LCD TFT15.6' HD GLARE LED EDP	LK.15605.029
CAMERA		
	CAMERA MODULE 1.3M	AM.21400.121
MAINBOARD		

Table 6-5. FRU list

Category	Description	P/N
	MA50_HX Intel i3-2367M UMA HM77	NB.RY811.001
	MA50_HX Intel i5-2467M UMA HM77	NB.RY811.002
	MA50_HX_i3-2367M_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.RYK11.003
	MA50_HX_i5-2467M_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.RYK11.002
	MA50_HX_i7-2637M_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.RYK11.001
	MA50_HX Intel i7-2637M UMA HM77	NB.RY811.003
	MA50_HX Intel i3-3217U UMA HM77	NB.M0N11.001
	MA50_HX Intel i5-3317U UMA HM77	NB.M0N11.002
	MA50_HX Intel i7-3517U UMA HM77	NB.M0N11.003
	MA50_HX_i3-3217U_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.M0P11.001
	MA50_HX_i5-3317U_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.M0P11.002
	MA50_HX_i7-3517U_N13P-GS_1GBVRAM Intel HM77 N13P-GS LF	NB.M0P11.003
MEMORY		
	Memory ELPIDA SO-DIMM DDRIII 1600 4GB EBJ40UG8BBU0-GN-F LF+HF 512*8 38nm	KN.4GB09.005
	Memory KINGSTON SO-DIMM DDRIII 1333 2GB ACR256X64D3S13C9G LF+HF	KN.2GB07.006
	Memory KINGSTON SO-DIMM DDRIII 1333 4GB ACR512X64D3S13C9G LF+HF	KN.4GB07.001
	Memory ELPIDA SO-DIMM DDRIII 1600 2GB EBJ20UF8BDU0-GN-F LF+HF 256*8 38nm	KN.2GB09.012
	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT325S6CFR8C-H9 LF+HF 256x8 38nm	KN.2GB0G.031
	Memory HYNIX SO-DIMM DDRIII 1333 4GB HMT351S6CFR8C-H9 LF+HF 256x8 38nm	KN.4GB0G.012
	Memory MICRON SO-DIMM DDRIII 1333 2GB MT8KTF25664HZ-1G4M1 LF+HF 256*8 46nm V79D	KN.2GB04.019
THERMAL MODULE		

Table 6-5. FRU list

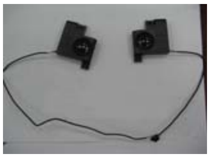
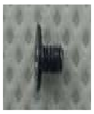
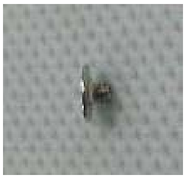
Category	Description	P/N
	THERMAL MODULE	60.RY8N5.004
SPEAKER		
	SPEAKER SET	
SCREW		
	SCREW M2*2L+4.2MM(K)B-NI NY #1	86.RY8N5.001
	SCREW M2*6L (K) B-ZN #1 NY	86.RN60U.002
	SCREW M2.5*5L(K)B-NI,NY	86.B050U.001
	SCREW M2*2L (K,D=5) W-NI #1 NY	86.RY8N5.003
	SCREW M3*2.5L K B-ZN #1 NY	86.RY8N5.004

Table 6-5. FRU list

Category	Description	P/N
	SCREW M2*2.5L(K)(ψ3.7) W-NI	86.W750U.003
	SCREW M2*6L(K,D4.6) B-ZN #1 NY	86.RY8N5.005
	SCREW M2*3L K B-ZN #1 NY	86.RY8N5.006
	SCREW M2.5*2.5L K B-NI #1 NY	86.RY8N5.002

CHAPTER 7

Test Compatible Components

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® 7 environment.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft® Windows® 7 Environment Test

M3 581T/581TG

Table 8-1. M3 581T/581TG

Vendor	Type	Description	Acer Part No.
Adapter			
10001081 DELTA	65W	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65VH BA, LV5, Low profile LED LF	AP.06501.033
60016453 CHICONY POWER	65W	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017
Audio Codec			
10004786 REALTEK	ALC271X_VB6	Realtek ALC271X_VB6 QFN-48	LZ.21000.161
Battery			
60001921 SANYO	3CELL4.85	Battery SANYO ID:AP12A3i Li-Polymar 3S1P SANYO 3 cell 4850mAh Main COMMON for embedded type	BT.00303.028
Bluetooth			
10001018 HON HAI	BT 2.1	BT 2.1 Foxconn Atheros BU22	BH.21100.023
10001018 HON HAI	BT 4.0	BT 4.0 Foxconn Atheros BU22	BH.21100.017
Camera			
60004445 PRIMAX	1.3M HD_S	Primax Camera PM_S119_SP_slim	AM.21400.121
Card Reader			
10000981 MISC	2-in-1 card reader	2-in-1 card reader	CR.21500.030
CPU			
10001067 INTEL	Ci32367MB	CPU Intel Core i3 2367M BGA 1.4G 17W	KC.23601.7MB
10001067 INTEL	Ci52467MB	CPU Intel Core i5 2467M BGA 1.6G 17W	KC.24601.7MB
10001067 INTEL	Ci72637MB	CPU Intel Core i7 2637M BGA 1.7G 17W	KC.26301.7MB
HDD			

Table 8-1. M3 581T/581TG

Vendor	Type	Description	Acer Part No.
60003544 LITE-ON OPT	FM0128S3	Flash Disk LITE-ON SSD NAND 128GB LMT-128M3M LF+HF firmware: VYC2	KF.1280L.001
60003544 LITE-ON OPT	FM0256S3	Flash Disk LITE-ON SSD NAND 256GB LMT-256M3M LF+HF firmware:VZC2	KF.2560L.001
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J28213,Eagle B7, 320G/P 7mmzh SATA 8MB LF+HF F/W:DA4788	KH.32007.017
60002036 SEAGATE	N320GB5.4KS _4K	HDD SEAGATE 2.5" 5400rpm 320GB ST320LT020/9YG142-188, Sapta 15,320G/P SATA 8MB LF+HF F/W:0001SDM1 7mmzh	KH.32001.021
60002005 HGST SG	N500GB5.4KS _4K	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380, Jaguar B7,0J23335, 500G/P SATA 8MB LF+HF F/W:DA4837	KH.50007.023
60003533 YOSUN	FM0020S2	Flash Disk PHISON SSD NAND 20GB SSE020GTTC0-S51 LF+HF	KN.0200Q.002
Keyboard			
10001044 CHICONY	AF7S_A10B	Keyboard CHICONY AF7S_A10B AF7S Internal 17 Standard Black NONE Y2010 Acer Legend	NK.I1713.001
LAN			
610112 BROADCOM	BCM57780	Broadcom BCM57780	NI.22400.047
MEM			
60004668 ELPIDA	CM2GBIII	Memory Chip ELPIDA DDRIII 1600 2Gb EDJ2108BDBG-GN-F LF+HF 256*8 38nm	KN.2GB09.013
60002050 MICRON SG	CM2GbIII13	Memory Chip MICRON DDRIII 1333 2Gb MT41J256M8HX-15E LF 256*8 0.055um	KM.2GB04.002
60002050 MICRON SG	SO2GBIII13	Memory MICRON SO-DIMM DDRIII 1333 2GB MT8KTF25664HZ-1G4M1 LF+HF 256*8 46nm V79D	KN.2GB04.019
60002045 HYNIX	SO2GBIII13	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT325S6CFR8C-H9 LF+HF 256x8 38nm	KN.2GB0G.031

Table 8-1. M3 581T/581TG

Vendor	Type	Description	Acer Part No.
60004668 ELPIDA	SO4GBIII13	Memory ELPIDA SO-DIMM DDRIII 1600 4GB EBJ40UG8BBU0-GN-F LF+HF 512*8 38nm	KN.4GB09.005
NB Chipset			
10001067 INTEL	HM77	NB Chipset Intel CS HM77 Chief River	KI.G7501.002
SB Chipset			
9999995 ONE TIME VENDER	N	N	KI.22800.011
ODD			
60001944 LG HK	NSM8XS9.0	ODD HLDS Super-Multi DRIVE 9.0mm Tray 8X GU61N LF+HF W/O bezel SATA	KU.0080D.064
VGA Chip			
60001915 NVIDIA	N13PGS	VGA Chip nVidia N13P-GS-A2 28nm, 29x29, GB4-128 package	KG.PGS0V.003
VRAM			
10000981 MISC	1G-DDR3 (64*16*8)	1G-DDR3 64*16*8	KI.23300.018
60002045 HYNIX	VR1GbIII9	VRAM HYNIX Graphic DDRIII 900 1Gb H5TQ1G63DFR-11C LF 64*16 46nm	VR.1GB0G.006
Wireless LAN			
23707801 FOXCONN TW	3rd WiFi 2x2 BGN	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072
10001023 LITE-ON	3rd WiFi 2x2 BGN	Liteon Wireless LAN Atheros HB97 2x2 BGN (HM) WN6603AH	NI.23600.073
A cover			
9999995 ONE TIME VENDER	Aluminum	Aluminum	LZ.21000.006
Software			
10000981 MISC	McAfee	Antivirus application McAfee	SR.23900.001
TPM (For future SKU)			

Table 8-1. M3 581T/581TG

Vendor	Type	Description	Acer Part No.
PLM00030 Nuvoton	NPCT420R	Nuvoton NPCT420R Foxconn Module 12x12x3.7mm (TPM FW:v3.69,TCG 1.2 rev.116,TxT compliance) HSF with EK embedded	NC.22911.002

CHAPTER 8

Online Support Information

Online Support Information

Introduction

This section describes online technical support services available to help users repair their Acer Systems.

For distributors, dealers, ASP or TPM, please refer the technical queries to a local Acer branch office. Acer Branch Offices and Regional Business Units may access our website. However some information sources will require a user i.d. and password. These can be obtained directly from Acer CSD Taiwan.

Acer's Website offers convenient and valuable support resources.

In the Technical Information section users can download information on all of Acer's Notebook, Desktop and Server models including:

- Service guides for all models
- Bios updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included an Acrobat File to facilitate the problem-free downloading of our technical material.

Also contained on this website are:

- Detailed information on Acer's International Traveller's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all technical queries.

We are always looking for ways to optimize and improve our services, so do not hesitate to direct any suggestions or comments to us.